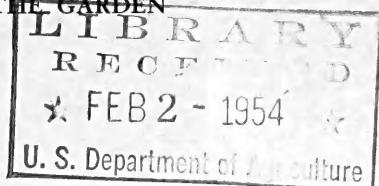


62.09

BULBS FOR POTS

AND SPRING PLANTING IN THE GARDEN



A CATALOG OF THE BULBS AND PLANTS OF THE AMARYLLIS, IRIS,
ORCHID, GESNERIA AND OTHER PLANT FAMILIES
AND MANUAL OF THEIR CULTURE.

Many Reduced Prices. New Items Listed. Complete Culture Directions.
A Personal Letter, — to You

SPRING 1954



CECIL HOUDYSHEL

1412 Third St.

La Verne, Calif.

Return Postage Guaranteed.
If not interested, please
refuse delivery.

Sec. 34.66, P. L. & R.

A PERSONAL LETTER — TO YOU

Dear Floral Friends,

This introductory letter will not be as we had planned. When our catalog copy was set up, every page, down to the last line, was full. There was no room for a letter.

So many have expressed interest in and approval of our letters that a letter had already been partly written. We have delayed the catalog's completion by about one day and have revised many paragraphs in order to get about one page of space. We can say only a little of what we would like to say.



First, we want to remind you that Mrs. Cecil Houdyshel has several sets of Kodachrome slides which she rents to garden clubs or groups. With each set a typed lecture, explaining the slides, is sent. Inquire about them from her.

Did you read our illustrated article on Amaryllis in Nov. Flower Grower? Many wrote me that they liked it. The best species and the best strains of hybrids were discussed. If you did not and would like to have a copy of the Nov. issue, send me 25c and I will mail it to you. I have only 25 copies.

Better still, send me \$3.25 and I will ask Flower Grower to enter a year's subscription for you or two years for \$5.25, still including the Nov. copy.

On Dec. 12 we potted one of each of our Royal Dutch Amaryllis. Today, Jan. 7, one flower is almost open. All the bulbs are budded or in spike. From the 6 var., all jumbo bulbs, offered for \$42.50, you should be able to raise several hundred seed and develop nearly as many seedling bulbs.

We have added a few fine new Gladiolus including miniatures. I know they will charm you and that you will be unlikely to find assorted named varieties elsewhere for 95c/doz.

We are also helping you to acquire Gloxinias at a low cost. Several new varieties of seed are listed and you should be able to raise a hundred or more blooming plants for only two or three dollars.

It is our sincere wish that you may have a fine garden this year, a better one than ever before, new plants and better varieties of old ones.

The advances being made in horticultural varieties of African Violets, Amaryllis, Begonias, Gloxinias and nearly all the ornamental plants are astonishing. African Violets, Saintpaulias, have proven to be most pliable in the hands of many hybridists who are working with them. We wonder if the Baron would now recognize some of them as Saintpaulias.

The topic I expected to discuss was based on a line from a poet I do not identify, "I am the master of my fate." Some other time I may again wish to do this. I believe you will agree that we are not the playthings of fate. Most of us can have a long, useful and happy life if we make an early choice and work for it.

With our best wishes for your health, happiness and prosperity.

Sincerely,

Cecil Houdyshel

TERMS AND INSTRUCTIONS FOR ORDERING

Prices in this catalog cancel all former prices. They are for one bulb unless otherwise stated. 12 bulbs are sold for price of 10 or 6 for price of 5. 100 bulbs for price of 70 unless noted. Books, garden supplies and plants take no quantity discounts. California customers must add 3% Sales Tax.

Remit in advance, in full, by check or M.O. No C.O.D. No charge accounts carried. Nothing reserved unless paid for in full. These terms reduce our expenses and lower the costs to you. Checks and M.O.'s must be payable to Cecil Houdyshel to fit our endorsement stamp. Stamps at face value accepted for small sums only.

Postage. Rates this season have been up 50%. There will be other large increases later. Yet, we have not increased prices except on items we buy for resale. In fact, this catalog lowers some prices, in the hope for a greater volume of sales. We prepay postage on orders of \$1.00 or over unless otherwise noted. On orders under \$1.00, send 15c extra. If you wish to send a little extra for the increased cost of postage, it will not be refused. For seed orders, send a self addressed, stamped envelope please. If wanted by **express** we include either larger sizes or extras. If by **air mail** we charge the customer only the excess cost above that required by regular parcel post.

Insurance up to \$5.00, costs 5c extra. \$5.00 to \$10.00, 10c. \$10.00 to \$25.00, 15c. Over \$25.00, cost is in proportion to \$25.00 value rate. Postal insurance covers all except freezing in transit. Only Express covers freezing. **Special Handling** costs 15c up to 2 lbs. 2 to 10 lbs., 20c. **Special Delivery** is better as it also speeds delivery and is handled more carefully. We are not responsible if plants are not immediately taken indoors. Up to 2 lbs. costs 35c. 2 to 10 lbs., 45c. Over 10 lbs., 60c.

Each fee, Insurance to Special Delivery is for one package only.

Order blanks. Make your own. They should not be in letter form as this makes it difficult for packers. Place one item only in a line, in this order: 1. Quantity ordered. 2. Name of item but not description. 3. (In column on right) price of item. Below add other extra expenses like sales tax, insurance, Special Delivery, etc.

A letter that requires an answer, when included with order, is referred to me and will likely cause delay of delivery. I am often a month behind with correspondence.

Wholesale. We give no discounts to dealers. There are several items we can supply wholesale. Send your want list and we will quote our best quantity prices.

Foreign Orders. If postage exceeds that to our 8th postal zone we charge the excess. Include a little extra for excess postage. **Canadians** should apply to Sec. of Destructive Insect and Pest Act, Advisory Board, Ottawa, Ontario, for Permit and labels and send with order. Many Latin American countries have laws governing importations. Be sure to inform yourself and act accordingly. Ask your Postmaster. Usually only a permit is needed.

Partial Shipments are made if bulbs are not all dormant at same time. We deliver everything within the season for correct planting.

We **guarantee** our bulbs to be true to name and healthy and replace them if not. If you follow our directions in this catalog, they will grow and flower. We cannot assume responsibility if you do not. Such a guarantee usually means that the expense of replacements is spread over the entire sales and everyone pays more for the plants. Everyone fails sometimes and we try to learn from our failures. As necessary **culture directions** are in this catalog, we send none with bulbs and other plants.

Catalog. Spring Catalog mailed Jan. 15. Fall Catalog, Aug. 15, or soon after. If you do not send us your orders your name is dropped from our mailing list. If not interested please refuse catalog or ask P.M. to return at our expense. Current catalogs are free. If an old catalog is wanted, please send a dime for it. In order to keep our catalogs coming, you must send orders as we drop names every year if you have not sent us orders.

We appreciate it if you show our catalog to your friends and recommend that they send a post card request for a copy.

We **ship** to every state and territory and to every continent. Calif. bulbs and plants do well, everywhere.

General Culture Directions

Rich sandy loam is the best soil. But if too sandy, it may lack fertility. It will require more rainfall or irrigation. The ideal garden soil will contain sand, clay and humus. Some plants, like Bearded Iris do best in a heavy soil. Plants of this nature seldom if ever like shade or acid soils and deep drainage is not so necessary. Some plants, like Gloriosas must have deep sandy soil. Probably most tuberous plants prefer sandy soil.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizer. We recommend only animal manures, compost and commercial fertilizers that are of organic origin such as Spoonit, listed in this catalog. In the outside garden fresh manure can be used on most plants that are growing vigorously as a very light mulch, but after flowering. Too much fertilizer before flowering may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruits.

Do not fertilize a plant in dry soil, or use any fertilizer (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better. Chemical fertilizers should be used with much discretion if used at all.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary to their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over-fed or fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use Spoonit, which we list under Garden Supplies.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like Ranunculus. In such cases plant farther apart. Bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soils than in heavy soils and in cold climates to protect them from frost.

Pests. Snails, slugs, ants, mealy bugs, thrips, aphis, leaf hoppers, mites, red spider and scale are among the most serious pests in the garden or on house and greenhouse plants. They must be controlled.

See our listing of **Insecticides** under **Garden Supplies**. Their uses are explained there.

If you do much garden work and end the day too tired, you owe it to yourself to use our light weight plastic and indestructible garden hose. See the listing. It is the most economical of all. We have 5 yr. old plastic hose that is in perfect condition.

Acid and Alkaline Soils. Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family), Nerines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like Gladiolus prefer mildly acid to neutral soils; Bearded Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of

hydrogen ions in a saturated solution. This is expressed in pH units. pH7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

In regions having heavy rainfall, excess alkali is usually dissolved and carried away by the runoff. Semi-arid regions usually have alkaline soils. Calif. soils usually have too much unless cover crops or applications of humus, which are acid, have lowered the pH. I am told that Texas soils are sometimes too alkaline. The remedy is obvious. Apply humus, ground phosphate rock, or small, even applications of sulphur. Improve the drainage.

Chlorosis of plants, indicated by lighter green streaks of foliage, may not be due to a virus disease, in all cases. It may indicate lack of all required nutrients, some of which can not go into solution in an alkaline medium. Among such nutrients are Nitrogen and Iron which are soluble only in acids.

Potting Directions. Use clean pots of the right size, neither too large nor too small. A $2\frac{1}{2}$ " Amaryllis, for example, needs a 6" pot. A $1\frac{1}{2}$ " Eucharis needs a 5" pot. Small bulbs like Ranunculus or Achimines may have 3 to 5 in a 5" or 6" pot. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place small pieces of broken pot and gravel. This helps to drain away excess water. Over this drainage material we usually place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely. Only very sandy soil will answer this purpose and the sand should be rather sharp and coarse, or part of it at least. Unless drainage is good, failure results with most plants.

Potting soils must contain plant nutrients, but not in excess, and humus. One can add a tablespoonful of bone meal and old rotted dairy manure for fertility and leaf mould, peat and/or sphagnum for humus. Nearly all potting soils should be at least slightly acid.

Basketing. Vining or pendant plants like Achimenes, Aeschynanthes and several of the other Gesneriaceae, Begonia Lloydii, Ceropegias, etc. look best and do best in our wire baskets, altho they can be grown in pots, suspended by the "Snap-on" pot hangers. Wire baskets allow perfect drainage and we prefer them also for some orchids like Laelias. We offer the best wire baskets made. Painted wire baskets soon rust out. Ours are galvanized, polished, not soldered but welded.

Place a thick layer of wet sphagnum on bottom and sides of basket. It should be well compressed and at least 1" or 2" thick. For the center one can use a mixture of peat, leaf mould and sand—or any soil formula favorable to the plant. For certain Orchids, Episcias and sometimes other plants, we use only sphagnum thruout.

Fertilizers. Many advise the addition of fertilizer to potting soils. We never use any except the rotted dairy manure and leaf mould and sometimes a tablespoon of bone meal. If new roots come into contact with much fertilizer they are burned. Commercial fertilizer is especially a hazard. A potted dormant bulb, seed or plant must be babied to the extent of giving only a light diet. A rich, full meal will often cause failure. We prefer to get them well started and growing and of some size before adding more fertilizer, if any. The chief food of plants is carbon dioxide taken from the air thru the foliage. Water, nitrogen and minerals come from the soil.

When bulbs are well rooted, liquid fertilizer can be used once a month. Weak liquid manure is excellent but not quite as well balanced as Spoonit.

For the starting temperatures and further culture of the plants please read the culture advice given with the listings.

Sources of Further Information. Please note our **Garden Reference Books**. Join local garden clubs. Subscribe for as many garden magazines as you can. We especially recommend Popular Gardening, Dept. H., 90 State St., Albany, N.Y., and Flower Grower, Dept. H., 99 N. Broadway, Albany, N.Y. We are charter subscribers of both. I suggest you buy copies of each at your newsstand. You will probably then subscribe for both of them.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedie of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. On Orchids alone this work is most valuable for its descriptions and culture instructions for almost every orchid in cultivation. The same is true for all types of bulbs, plants, shrubs, or trees. Price \$45.00. It is the most monumental work in any language on the entire field of Horticulture. It is an ideal gift for a plant lover.

Hortus Second (Bailey). A concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedie of Hort. It contains only a few culture hints. Both works should be in every garden library. Price \$12.50.

All books are subject to price changes, without notice, by the publishers. In the case that prices again rise on any book listed here we will notify the customer. The customer may then accept or cancel order.

A Southern Garden, by Elizabeth Lawrence, a handbook for the Middle South. A most useful handbook for all gardeners, north or south. Bulbs and all garden plants. 251 pages. Price, \$3.00.

Enjoy Your House Plants. Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson. 238 pages. Price, \$3.00.

American Orchid Culture. Edward A. White. This is a complete handbook of American Orchid Culture for both commercial and amateur growers. Most interesting accounts of Orchid hunting trips, in many lands, are related. 14 beautiful color plates and many other illustrations. A beautiful, interesting, useful book. 276 pages, \$6.00.

Greenhouse Gardening For Everyone. Ernest Chabot. Important factors are noted, including correct temperatures for forcing plants, bulbs, and orchids. 266 pages, \$4.00. If you have a greenhouse, this is a necessity.

How To Grow Rare Greenhouse Plants. A new book on greenhouse gardening by Ernest Chabot. Complete directions for greenhouse culture of 260 rare plants. Being non-professional or amateur, Mr. Chabot knows best an amateur's problems and how to advise him. Everyone having a greenhouse should have both books. 182 pages. Illustrated. \$4.00.

Geraniums, Pelargoniums, by Helen Van Pelt Wilson. 248 pages, 7 color plates, many drawings and illustrations. Best book on this subject. \$3.95.

Gloxinias, And How To Grow Them, by Peggy Schulz. The author is co-editor of The Gloxinian and a prolific magazine writer on a great variety of house plants. She bases advice on long experience. This is the only book on this subject and every grower should have it. I have only one criticism. This attractive young woman with the earnest look, should use her photograph as a frontispiece instead of placing it on the inside back cover. Well illustrated by colored plates and line drawings. Many Gloxinia relatives discussed, 128 pages. \$2.95.

Tuberous Begonias, by Worth Brown. Mr. Brown is one of our most important hybridizers and wholesale growers. His book is a complete guide for the successful growing and propagation, outdoors or as house plants. 128 pages, illustrated. \$2.75.

Bulbs For Beauty. Charles H. Mueller. 296 pages, illustrated. Experienced gardeners will gain new information about bulb culture from this book. Price, \$3.50.

How To Grow Orchids. By Cecil Houdyshel. A 12-page pamphlet, no illustrations, carefully explains requirements of easily grown orchids. Price, 25c.

How to Grow Cattleya Orchids and a few others is told briefly in our 1949 Orchid Price List. The listings are now all cancelled. Price, 15c.

The Complete Book of African Violets. By Helen Van Pelt Wilson. This is completely new and gives best information on hundreds of varieties. 29 Saintpaulias are shown in full color. 256 pages, fully illustrated. \$2.95.

How To Grow African Violets. By Carolyn Rector. 94 pages, paper-board covers. Illustrated. How to pollinate, hybridize, grow from seed or leaf cuttings, prepare soils, control pests and diseases, groom plants for show, etc., by a real grower. \$1.35.

The Book of Trees. By Alfred C. Hottes. 200 illustrations. Everyone loves trees and this book describes all worthwhile trees, their stories, uses, culture; historical trees; lists for every situation. Mr. Hottes knows trees and writes in a charming style. 440 pages. \$4.00.

The Wise Garden Encyclopedia. By a group of American authorities. Edited by E. L. D. Seymour. 1,380 pages. Profuse illustrations. 64 pages in color. Price, \$5.00.

A to Z On Fuchsias. 136 pages. Cloth bound. Illustrations, some in color. 700 varieties described. \$3.00.

Garden Supplies

Postage Extra is necessary on several items below. The weight when packed is given on these items. It is clearly stated that you must send the postage when you order. Many do not and we must write for it. Here is how to find it. We are very near Los Angeles. Call your P.O. and ask the cost of postage on the packed weight given from your P.O. to Los Angeles and send us that amount.

If your shipment goes by express, no postage is due. But the minimum cost of an express package is now \$1.85, any weight, any distance.

Snail-Kil Pellets. 1 lb., 45c, plus postage for 2 lbs. Two pounds, 75c, plus postage for 3 lbs.

Ant-B-Gon. Set of 4 filled dispensers, 75c, plus postage for 1 lb. Refilling liquid, 4 oz., 40c postpaid.

Volc Oil Spray, for outside plants. Kills mealybugs, scale, red spider, etc. Don't use on orchids, saintpaulias, or most house plants, palm trees or ferns. Fine to clean up your shrubs, trees and most outside plants. 4 oz., 50c, postpaid.

Thrip O cide. Contains D.D.T. Kills thrips on Gladiolus or other plants, Scale on Orchids. 4 oz., \$1.20 postpaid.

Vio-Vim, a Fungicide and Bactericide for African Violets. 75c prepaid. Its effect is apparent in the stimulated growth of the plant.

Wonder Garden Spray. Spray as directed for cyclamen mite, mealybug, red spider and other pests. \$1.10 prepaid.

We assume no risk for results with insecticides.

Spoonit is the fertilizer we use on African Violets and other house plants. It is equally good on outside plants. Analysis: nitrogen 18%; phosphoric acid 18%; potash 14%. To use, dissolve level tablespoon in a gallon of water. It never burns. Apply once a month. Give transplants half strength. 6-oz. package, 50c plus 8c postage; 24-oz. \$1.25, plus postage on 2 lbs.; 4 lb. package \$2.50, plus postage on 5 lbs.

Potting Soils. We have not formerly listed potting soils but give soil formulas and list materials for making them, but many prefer to buy a ready made mixture.

Black Magic. African Violet Mix. The users praise it. 8 oz., price 45c. Plus 10c postage.

Peat. Best Holland Peat, 4 lbs., 50c, f.o.b. If by mail, add 2 lbs. for carton and send the postage.

Sphagnum Moss. Best we can get. 70c per lb., postage extra, for 2 lbs.

Osmundine, best Florida brown fiber \$1.35 per lb. package, postpaid.

Plant Labels. The following are plastic labels, easily written upon with pencil.

Pot Labels, length 4½", 35c doz. Length 3½", 30c doz. Small labels for African Violets, 2" long, 30c doz. **Orchid Labels.** Perforated on one end, but without wire or cord, 2½", 30c doz. **Aluminum Tree Labels.** Emboss name on label with sharp pencil or ball point pen. Two sheets of Aluminum make this strong and permanent. Aluminum wire to tie on. 35c doz. Package of 50, \$1.00. Please include with order of \$1.00 or more or send 15c extra for handling if order is under \$1.00, on all label orders.

Plastic Garden Hose. The best made. Cheap plastic hose will disappoint you. This hose is not damaged by sun, weather, being run over by trucks. Only hot water under pressure will injure it. It should last 8 years or longer. Weighs only 3½ lbs. per 25 ft. Price, 25 ft., \$5.50, plus postage on 4 lbs. 50 ft., \$10.75, plus postage on 7 lbs.

Wire Baskets. Our wire baskets are electrically welded, galvanized, non-rusting steel.

The best obtainable. They look better, last longer than painted, soldered baskets and cost but little more. Price, with hangers, 8", \$1.00. \$11.00/doz. 10", \$1.25 ea., \$13.50/doz. 16", \$2.75 ea. \$25.00/doz., Postpaid.

Snap On Pot Hangers, for hanging any size pot in tree, lath house or greenhouse. Galvanized, non-rusting steel 50c ea. \$5.00 doz. postpaid.

Baffle Spray Fogger. For greenhouse, lathhouse or outside. Fits $\frac{1}{2}$ " pipe. Adjustable fog spray thrown 6 ft. increases humidity, lowers temperature. Price, \$1.36. If by mail add 10c.

Hose End Fogger. Coarse or fine spray. Useful for spraying orchids, tub. begonias, etc., and for damping greenhouse to increase humidity or as a moveable fogger. \$1.50. Postage, 10c extra.

Rootone. Dust seed, roots of transplants, end of cuttings or base of bulbs for quick rooting, more rapid growth. $\frac{1}{2}$ oz. 50c postpaid. 1 lb. can, \$5.00, plus postage for 6 lbs.

Vitamin B-1, 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning**. Do not soak dormant bulbs in Vit. B-1. It rots them.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationship.

In the following lists the **genus** (plu. genera) is mentioned first. After it, the species (plu. also species) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full. When a person's name in parentheses follows a plant's name, that person is the botanical authority for the name.

THE AMARYLLIS FAMILY — Amaryllidaceae

This Family includes the following bulbs, Agapanthus thru The Alliae.

The American Plant Life Society was founded in 1934 as The American Amaryllis Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening in interest in Amaryllids.

The annual book, "**Herbertia**," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton P. Traub of the U.S. Dept. of Agriculture, (now retired) the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants. Due to present shortage of paper and its high price these publications at present are included in one volume per year.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.00 per year, which you may send to Miss Pauline Buck, Sec. 25 E. Camino Real, Arcadia, Calif., or you may include this membership fee with your bulb order to us.

The Society also publishes the following book, bound in Manila paper.

Amaryllidaceae: Tribe Amarylleae, by Traub and Moldenka. 18 illustrations, 194 pages, \$4.00. This is a systematic treatment of one of the main tribes of Amaryllids, in scientific language. The most important work on the taxonomy of Amarylleae since the publication of Baker's "The Amaryllideae," in 1888. Order from the Sec., Miss Buck, please.

Amaryllid nomenclature. Carolus Linnaeus, father of modern botany, made the first, rather complete scientific arrangement of plants according to relationships in the 18th century. His information about many plants was wholly inadequate to achieve perfection.

Even in my later first French edition, 1798, nearly all American epiphytic orchids were placed in one genus, Epidendrums, and under the genus Amaryllis he included certain Crinums, Zephyranthes, Sprekelias, Brunsvigias, Nerines, etc. Botany is a progressive science and later explorations and discoveries have made possible many improvements in plant classification and have required changes in nomenclature. Horticulturists are often loath to accept the new classifications and names. But we must do so even if inconvenient at first. It is not logical to continue an error.

In our catalogs, we accept changes in classification and names as made by recent writers in *Herbertia*. These have been approved by "Gentes Herbarum," the publication of the Bailey Hortorium of Cornell University. To help you avoid ordering a bulb you already have we give both old and new names, thus: Brunsvigia rosea (Amaryllis belladonna); Amaryllis advena (*Hippeastrum advenum*).

Agapanthus, Blue Lily of the Nile. Best time to plant is early spring. They flower here in June to Aug. In the north they must be grown in large pots or tubs and wintered in a frost free room. Plant in full sun exposure in any good garden soil.

Agapanthus longispathus. Similar to well known *A. orientalis*, but smaller and later to flower. Profuse bloomer. Advised for pot growing. 50c, 3 for \$1.25.

A. orientalis. Dark Blue. More robust than *longispathus*. Superior clone. \$1.00.

A. orientalis. Sky Blue. 75c.

A. orientalis alba. Pure white. \$2.00.

A. von Weillighi hybrids. Selected Clone. A giant type, very large, round umbel of blue flowers on a tall stem. \$2.50.

Amarcrinum Howardii (*Crinodonna Howardi*). A cross between *Brunsvigia rosea* (*Amaryllis belladonna*) and *Crinum moorei*. Flowers are a pure pink and very attractive. Fall bloomer, order early or it may skip blooming first year. Hardy in south. For large pots in north. A very popular and desirable bulb. Culture similar to its parents. \$2.00 and \$3.00 ea.

Amaryllis Linn. This genus as constructed by Linneaus was untenable because he included plants now known to belong to other genera. The invalid name *Hippeastrum* was used by both Herbert and Baker, but now we are scientifically correct when we use the name that has always been most popular.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How to Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they may be planted deeper in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids." Amaryllis must not be planted close to trees, shrubs or large vigorous plants, whose roots compete and take the moisture. Irrigate frequently. Rain is seldom enough. The most common error is lack of sufficient moisture. They are endemic to the tropics and in many cases, where there is almost daily rain. We have never had an employee whom we could trust to water Amaryllis enough. The soil should contain a good percentage of humus. Add well rotted manure and if not slightly acid, add some peat but do not acidify the soil with sulphur or aluminum sulphate. We do not advise planting imported, greenhouse grown bulbs in the outside garden.

In Pots. A $2\frac{1}{2}$ " bulb requires a 6" pot. Give a 3" to $3\frac{1}{2}$ " bulb a 7" pot. Remove dead roots but every vestige of living root should be left on. The best soil mixture is rich sandy loam 50%. The balance may be equal parts of sharp sand, peat, rotted leaf mould and rotted or dry, powdered dairy manure. Tablespoonful of bone meal to each pot is good. Place bulbs so that neck and about $\frac{1}{4}$ of bulb is above soil surface. Water well to settle the soil. Usually this first watering is enough until growth starts but the soil should not dry out completely. Add only a little if necessary. Over watering when dormant may rot the roots. At this time a temperature of 60° is favorable to root development. When growth starts gradually increase amount of water. When in full

growth maintain constant moisture with no drying out. A mulch of sphagnum on top of soil is advisable.

During active growth, fertilize with weak liquid manure, color of very weak tea, about every 2 to 4 weeks or use Spoonit. If tips of foliage turn brown or dry you are probably over fertilizing. Temperatures when growing well should be about 60° at night and 70° to 80° in day time.

We give potted bulbs plenty of sunshine. Seldom do plants or flowers need protection tho in mid-day they may in some sections. Examine plants for mealy bug which can cause failure if not controlled.

Dutch Hybrids. These fine hybrids require special care. They have been greenhouse grown for generations and may be kept in good condition for many years, even indefinitely, if their culture requirements are met.

There should be enough peat in the soil to make it definitely acid, use no clay. Add enough sharp sand to provide quick drainage as the plants must be watered frequently when growing and blooming. Do not omit bone-meal and when in thrifty growths fertilize with liquid manure,—not too strong, about the color of weak tea. Or use Spoonit, or mulch plants with a little dairy manure, any manure. Overfertilizing is bad. It will cause wilting of foliage or dry tips. A varied diet is good.

Many times customers have given us bulbs they could not make grow. Not once have we failed to start them and grow them on. We plant the recalcitrant bulb in a small pot of pure sphagnum and keep it warm and wet. Often roots are started within two weeks and sometimes even top growth. When sufficiently well rooted shift to larger pot of proper soil but do not remove sphagnum or disturb roots.

Keep potted Amaryllis moist at all times. We never force Amaryllis to go dormant. Many bulbs will grow almost the year around and often bloom earlier if kept growing.

Prepared Bulbs, for Christmas flowering. Customers report that after flowering they decline, fade away. If some one will send me one of these decadent bulbs, I will see what I can do. Give name of strain and variety.

No quantity discounts on Amaryllis, except as listed.

Guarantee. If you do not like the flower, return it at once stating cause of disapproval. We will replace with another bulb. We appreciate but do not require 25c for postage on replacement. Thus we can give more insulation.

A. ambigua. Lily shaped, white flowers with pink markings, on tall straight stems. 5 to 7 flowers in an umbel. The exquisite spicy fragrance perfumes the entire garden. Plant 4" deep in garden in south, to Okla. \$2.50.

A. immaculata (syn. *A. candida*). The very large, pure white flowers are lily shaped and exquisitely fragrant. This very rare and beautiful species is a prized possession for any flower lover and grows to a very large size. Price \$5.00. Very large, \$6.50.

Howard and Smith Hybrid Amaryllis. This firm has bred Amaryllis many years. They have produced the best American strain. They are located only 25 miles from La Verne and I have known them intimately for over 30 years. The business is strictly wholesale. I have checked many times on their breeding methods and they are the best, and as follows. From their fields, the best colors and varieties are selected and placed in their greenhouses. These are to become "mother bulbs." The pollen parents are selected from outstanding bulbs of their own and from imported hybrids. A recent survey of their plant shows that they are growing thousands of Dutch and other imported hybrids, and many selected from their own fields. These are now potted and will be placed soon in greenhouses.

One expert hybridist has charge of these houses. Pollen is used only from the most choice flowers and many, even of the imported hybrids are not good enough. Only the most vigorous bulbs are used as seed parents. The seedlings are grown in beds for one year then moved to a field until blooming sizes develop. Weaklings do not survive the field culture and thus at maturity their blubs combine hardiness and beauty.

Dime store and most seed store Amaryllis are produced by growing from unselected, chance crosses or self pollinated seed. Thus the bulbs with the strongest vegetative functions are reproduced. They are beautiful, strong bulbs. The flowers often please those

who have not seen the contour and refined colors of the Leopoldi type. This type has a short tube and a wide open flat flower of fine contour. The petals are rounded and wide—not pointed. This is the ideal. Actually, assorted or unnamed seedlings are variable in quality and one should buy at least a dozen bulbs and pollinate only those of the very best. Planting the resulting seed you will be able to produce superior blooming bulbs in 3 years. Each generation should be better.

Howard and Smith Strains. Assorted shades of red, scarlet, salmon, rose, white backgrounds, etc. Do not order colors separately. We find more choice colors in the assorted than in named colors. $2\frac{1}{2}$ " bulbs 90¢. 3/\$2.50. 6/\$5.00. 12/\$9.50. **Large sizes** are preferred as they usually give 3 scapes from each bulb while the $2\frac{1}{2}$ " give only one or two. The following graded 3" when dug but drying out has reduced diameter. Price \$1.50 ea., 3 for \$4.00. \$15.00/doz.

Royal Dutch Amaryllis by Warmenhaven. Holland's best strain, the most perfect Leopoldi type, rounded petals, not pointed; wide open flat flowers, 8" or more wide, usually 4 to a scape; refined, pure colors. Largest size bulbs, $3\frac{1}{4}$ " diam., with living roots if ordered early.

Lucifer. Darkest, glowing red \$7.50 ea.

Queen of The Whites. Pure waxy white, with 9" flowers. Like all whites the throat is faintly tinted green when first opened. \$7.50.

Queen's Page. Clear salmon, 8" fls. \$7.50.

Red Master. Deep bordeaux red, of fine contour. This is one of the largest flowered varieties, with 11" to 12" flowers. \$8.00.

Salmonetta. Lovely soft pink, blending to orange pink in throat. \$7.50.

Violetta. Violet tint, a very unusual color in amaryllis. \$7.50.

Complete Collection. All 6 varieties for \$42.50.

Houdyshel's Hardy Hybrids. These are not hardy outdoors in the colder northern states but as far north as North Carolina, Washington, D. C., Oklahoma and even So. Kansas these have proven winter hardy if covered by 4" of soil and given a good winter mulch of straw. Possibly with a pile of brush above the straw they might be wintered in the garden farther north.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. There are always a few flowers in the field in the fall. They might give winter flowers in pots. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors in Feb. and March will be most welcome. Price 75c each. \$7.50 per doz. \$40.00 per 100, prepaid.

Amaryllis Seed. We have only a few of 1953 crop and must price accordingly, but not above their value. 25 seed for 50c. Order early. We shall soon sell out. 1954 crop of seed will be ready in July. Price, 25 seed for \$1.00.

Plant seed as soon as received in good sandy loam soil. Add a good portion of fine leaf mould. Seed may be just touching on edges. Cover with $\frac{1}{2}$ " soil. If in pots and soil is wet, cover with a pane of glass and they are likely to come up before soil becomes dry. Keep seedlings in house or greenhouse the first 2 or 3 winters so that they can grow all winter. If this is done, they usually begin to flower in 2 or 3 years. They can be transplanted at any time to give more growing space.

Plant Breeding is an interesting science and art. Undertaken as a hobby, it has often resulted in fame. It will involve and develop great skill, ideals of beauty, good taste and intelligence. I suggest you start with our Howard and Smith and Royal Dutch Hybrids. Get several bulbs and use the pollen only from those you like the best. Cross pollination is easily accomplished by placing the powdery pollen borne by the six stamens on the stigma in the center. The stigma when ready for pollen will usually be opened into three parts. Seed should be planted soon after ripening. Some of the seedlings will be fine self colors.

Clivias have evergreen, strap-like foliage somewhat resembling that of Amaryllis.

The flowers are produced in umbels of 10 to 25, in rich and exquisite tones of orange, in March and April. When not in flower the deep rich green foliage and later the red fruits are most ornamental.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced $\frac{1}{2}$ " apart, and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 6" to 8" for small plants and up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil is described under "General Culture Directions." pH7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open soft yellow orange fls. \$1.00, \$2.00 and \$2.75.

C. miniata hybrids. Similar to the species "miniata" in foliage, hardiness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrids as we cannot tell the color from the plant. We have been selling these at low **special prices** and are now out of blooming size but can supply smaller sizes at 65c, \$1.25 and \$1.75 that with good culture should flower in one, two and three years.

C. cyrtanthiflora. The flowers are tubular and long, yet they are so numerous that they fill a large umbel and make a beautiful floral display. They are distinctly different from other Clivias also in their time of flowering. There is not a month in the year when we do not sometimes have flowers. Price, \$15.00.

Most **Crinums** are large bulbs and plants tho a few are no larger than an Amaryllis. They are very popular in the south and are a common sight in southern gardens. Among trees and shrubs they're indispensable.

The lovely lily-shaped flowers are useful to florists especially those who must grow most of their own flowers. They are particularly nice in a wreath.

Culture. *C. bulbispernum* is hardy in the north, but there it should be planted 6" or more deep and mulched in winter. *Crinums moorei*, *Cecil Houdyshel* and *Powellii Alba* are almost if not entirely as hardy.

The ideal situation is among trees and shrubs, in a sandy soil but all except *moorei* can be grown in full sun exposure and in heavier soils. There should always be much leaf mould and peat incorporated in the soil—especially if heavy. The alkaline California soils need the addition of peat for growing Crinums. If your *Crinum* foliage becomes blotched with lighter green, as in the case where plants are infected with mosaic disease, the addition of much peat to this soil will lower the pH and probably cure the plants.

Crinums succeed in large pots or tubs but most of them require much space for house or greenhouse growing. Tubbs can be stored over winter and set outside in summer. In the south the bulbs may be planted very shallow. Keep always wet when growing.

Crinum Americanum. Our only native species. Beautiful, narrow petaled, light pink flowers. Resembles a spider lily. This is a superior clone that does well in California. \$1.50.

C. bulbispernum. We have sold this as "capense," then as "longifolia" but botanists give priority to the present listed name because first given. We are out of the white form, *alba*, and offer only the pink, *rosea*. Hardy in north, if planted deep. Small, 50c. Good blooming size \$1.00.

C. campanulatum. Belongs to the "Milk and Wine Lily" type. That is, the flowers are white with a bright rose stripe thru center. \$1.00. Very large, \$1.50.

C. Cecil Houdyshel. Flowers deep rose pink. One of the best hybrids, all qualities considered. It has the same parents as C. Powellii but with C. bulbispermum as the seed parent. Instead of flowering only once, like Powellii, this hybrid flowers most profusely. One very large bulb has been known to give 12 or more flower scapes in one year. A large clump will give continuous bloom from spring to fall.

An article in the Kansas City Star by Jack Romine, reported it hardy in that vicinity. Now there are many growing from Topeka, Kan. to Independence, Mo. If planted 6" or 8" deep (to bottom of bulb) and heavily mulched over winter it has survived 10° below zero temperature. Spring is the best time to plant this and all Crinums in the north. Thus they become well established before fall and are more winter hardy. Plant any time in the south.

We offer several sizes. Smaller sizes will give a start but are unlikely to flower the first year. Prices: Small, \$1.25; medium, a blooming size, \$2.00; larger, \$3.00. Jumbo bulbs in two sizes, \$4.00 and \$6.00. The latter will furnish a lot of flowers the first year. Keep this variety very wet at all times and its rapid growth and profuse blooming will surprise you. The \$6.00 bulb weighs up to 3 or 4 lbs. If we fill your order we guarantee its winter hardiness. If killed by winter cold we replace with another or equal value of other plants. Our bulbs began to flower this year in March, a few flowers may be seen today Dec. 21.

C. Ellen Bousanquet. Large, glowing, dark wine red flowers. The most beautiful crinum. \$1.00 and \$1.50.

C. Erubescens. Milk and Wine Lily. Red purple center stripe on petals. 75c to \$1.50.

C. H. J. Elwes. Pink, very beautiful. Does not make large bulbs. Small plant more suitable for pots. Tender. Med. \$3.50.

C. Louis Bousanquet. Very free flowering thru an unusually long season. Pink flowers on a very tall, erect scape. 75c and \$1.50.

C. Moorei. Large pink, bell-shaped flowers in the fall, freely produced. The long neck of the bulb surmounted by rotated leaves give the plant great decorative value. Requires shade. Nearly as hardy as bulbispermum. \$1.00 and \$1.50.

C. Peach Blow. Exquisite large pink flowers. Free flowering from largest bulbs. A valuable hybrid. Blooming size \$5.00. Largest for \$6.50. Probably tender.

C. Powellii alba. Extra fine pure white. One of the most valuable and beautiful Crinums. Small 50c. Good blooming size \$1.00. Largest, \$1.50.

Eucharis amazonica (or Grandiflora). Eucharist Lily. Star of Bethlehem. First collected on banks of Rio Magdalena, Colombia, S. A. Thus are combined three Biblical names in the lore of this flower. There are 4 pure white, very fragrant flowers in an umbel with a cup in center. The beautiful evergreen foliage makes this always a decorative plant. Flowers are used in corsages and bouquets.

Culture. For pots only. Soil, coarse, fibrous loam with coarse sand, granular charcoal, tablespoon of bone meal and a little cow manure added is usually recommended. We add peat and milled or even coarse sphagnum moss and get excellent growth and flowers.

Because they need abundance of water when blooming, the drainage must be perfect. Use 5" pot. Feed with Spoonit or manure water except when resting, shaded but plenty of light and some sun is needed to develop flowers. Frequently they flower very soon after potting. If they do not, induce good growth for several months until offsets appear and pot is well filled. Then dry them off, giving only enough water to prevent entire loss of foliage. After a few weeks rest, water once or twice. If they do not flower the rest was not long enough or the growth before was not sufficient. From 2 to 4 crops a year may be had. They are tropical plants and 65° is the best minimum night temperature. We offer best and largest imported bulbs we can get, about 2" diam., at \$2.00. Started plants in 5" paper pots, \$2.75 postpaid.

Elisena longipetala. Very rare and lovely Peruvian amaryllid. It is related to the

Ismene but the pure white flowers are far more delicate and graceful. Culture like Ismene. It can be forced in pots or grown in the garden in summer. Bulbs stored over winter like Glads. It is hardy in the middle south. It may be crossed with Ismene. \$2.00.

Habranthus robustus. Long tubular, lavender pink solitary flowers. Closely related to Amaryllis. A "now and then" bloomer in all seasons if watered well. Hardy in middle south and a good pot bulb. Plant 4" deep, full sun. 50c ea.

H. brachyandrus. A larger purplish flower that is most attractive. Like most Habranthus they bloom several times a year by alternate dry and wet weather, natural or artificial. \$1.00 each.

H. andersoni texanus. A small Texas native sometimes called Rain Lily as it blooms many times a year, after a rain. Coppery yellow. Delivery when dormant, about July. 35c each.

Haemanthus. The Blood Lilies of South Africa. So rare that few have seen them.

Culture. Hardy only in almost frost free climate like So. Calif. or Fla., if temperatures do not go below 24° at night. They do well in pots anywhere. The soil should be very sandy and contain a good proportion of leaf mould or peat as they are shade plants and like mildly acid soils. Pot with top of bulb barely covered.

Haemanthus produces red fruits containing seed. The flowers require hand pollination which may be done by rubbing palm of hand over the flower umbel when pollen is ripe. This spreads it to the pistils. Do this every few days as flowers do not all open at one time. Thus many valuable seed may be produced. Do not gather until quite red. When ready to plant, remove outer pulp and plant by pressing seed down slightly into soil but do not cover. One may plant in large clay pans and covered by pane of glass. Thus no watering may be needed until most of the seed are started. Growth begins by emergence of a radicle which will penetrate the soil. If soil is not loose, it may need help. A small bulb will form on tip of radicle and will later send up a leaf.

H. carneus. A small species that is winter growing like coccineus. Flowers are pink to flesh colored in an umbel on a 6" to 8" stem, in July. Two short, prostrate leaves follow the flowers. \$2.50. Delivery, late spring when dormant, but not after July 1.

H. coccineus. The true Blood Lily, altho all Haemanthus are known as Blood Lilies. The umbel of scarlet or blood-red flowers come in late Aug. to Sept., after a 3 months dormancy. Two long semi-erect leaves follow the flowers and remain green thru the winter and early spring. The scape is attractively marked by red spots on a bright background. Good flowering size, \$3.00. Extra large that should give many more flowers and seed, \$4.00. Order early. They are usually thru flowering, even in storage, by Sept. 15 to 30. Order now and we can deliver about June.

H. Katherinae has been called the most beautiful of flowering bulbs, in both foliage and flowers. The umbel of bright red flowers is often 10" in dia., often there are 125 or more flowers. The broad leaves spread from the top of a 10" stem making this a very attractive plant, for a 10" pot. Flowers usually in June or as late as Sept. In Jan. or later the green top bends over, the neck splits and a new growth emerges. Our stock is limited. Good flowering size, \$5.00. Largest size with several offset, small bulbs attached, \$7.50. Delivery Jan. to Apr. Too tender for mail delivery to north when very cold. We will ship f.o.b. express very early or await warmer weather and ship postpaid. Please instruct us. We select larger bulbs for express shipments.

H. multiflorus. In general appearance, it resembles Katherinae, but a little larger plant from large bulbs but slightly smaller umbel of flowers. Stem heavily spotted brown. This species is ideal for pots as it is more tropical and more tender. Blooms earlier. Flowers are described by botanists as blood-red but you may disagree. This exquisite species has sold by florist for \$25.00 when flowering. Try crossing it with Katherinae. Blooming size, \$5.00. Largest bulbs, \$7.50. Delivery about Feb. to April but not by mail to north until weather permits. Express is safe, any time.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But

these are so freely produced, thru a long period, that "beautiful every day" would be more apt, as a collection of several sorts show masses of flowers throughout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy, even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

They are an almost perfect border or landscape plant, never have to be dug and replanted. All that you must do for them is keep the weeds down and water. A heavy leafy mulch helps every way.

Hemerocallis Araby. 30". E. A lovely pastel color, with the effect of bronze on gold dust. Blooms early. 75c.

H. Calypso. Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

H. Cecil Houdyshel. E. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$1.00.

H. Chengtu. E. Brilliant coppery orange-red with carmin mid-zone. 36". July-Sept. 50c.

H. Cinnabar. E. Cinnamon sprinkled with orange, gold-glistening. 30". July-Aug. 50c.

H. Crown Prince. E. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.25.

H. Dauntless. E. Cadmium yellow. Fulvous red blended in mid-zones. Pastel effect. 30". June-Aug. 75c.

H. E. A. Bowles. 48". Large ruffled flowers of deep red-orange blended with gold. Early. 50c.

H. Evangeline. 40". Large, rosy flowers with purple eye zone. Early. 75c.

H. Florham. E. Still popular old hybrid. Large, golden yellow. May-July. 50c.

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$1.50.

H. Iris Perry. E. 36". July-Sept. Orange-bronze. 50c.

H. Kwanso. The Double Orange Daylily. 25c ea. 3 for 50c.

H. Linda. E. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.

H. Mandarin. E. 48". Lemon yellow. June-July. 50c.

H. Margaret Perry. E. Brilliant orange-scarlet. 4 ft. July-Aug. 35c.

H. Mikado. E. Orange with mahogany-red zone. A favorite. 3 ft. May-July. 35c.

H. Modesty. 36". Large, pale creamy yellow. Our nearest white. 50c.

H. Nubiana. E. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 50c.

H. Patricia. 30". Pale yellow, large fragrant flowers. July-Aug. 50c.

H. Radiant. 42". Rich orange, June-July. 50c.

H. Rajah. 40". Deep English red, veined darker. Garnet red eye-zone. July-Aug. 50c.

H. Rosita. E. 36". Near Carmine, tinted copper. Part shade best. \$1.00.

H. Royal. E. 40". Beautiful golden yellow. Fine texture. July. 75c.

H. Royal Ruby. All agree, it is the finest red, to date. Whether ruby, carmine or crimson is undecided. 40". July-Aug. \$2.50.

H. Serenade. 48". Rose on apricot cream. Faint dark overcast. June-July. 75c.

H. Sibyl. E. Dark red-purple petals, lighter sepals. \$2.00.

H. Soudan. 36". Lemon yellow. Broad, wavy petals and sepals. June-July. 50c.

H. Vesta. 30". Deep orange with glistening gold sheen. May-July. 50c.

H. Vulcan. E. 30". Darkest maroon red. July-Aug. 50c.

H. Wau Bun. Large apricot, sprinkled fulvous-red. The twisted and curved petals add gracefulness to its beauty. 75c.

Complete Collection. The entire list of 31 varieties are priced singly for \$21.50. They will be labelled with permanent aluminum garden labels, an added value, for \$20.00 postpaid. If by express, f.o.b., we will send larger divisions.

Ismene. Their large, very fragrant, white flowers are very desirable for cutting and are seen often in florists' shops. The flowers are about the size of daffodils and because there is a cup in the center, they are often called "Peruvian Daffodils."

Culture. They are hardy only in the south. With deep planting they may be grown as far north as the Carolinas, where they should be covered by 5" of soil and well mulched in winter. Probably safe to leave in the ground in Oklahoma. In the north, plant in the garden in early spring and after frost cuts down the tops, dig and dry the bulbs well, then store at a temperature over 55°. If too cold in storage the bulbs will not flower and they may rot. Even in the south they must be covered by 4" of soil. Ismene can also be grown in pots. See also their close relative, Elisena.

Ismene calathina. Type variety. 50c ea.

I. festalis. An Ismene-Elisena hybrid. Pure white, no green markings. Long, narrow petals give great refinement and beauty to the flowers. No white Amaryllid is more elegant. \$1.50.

I. Sulphur Queen. Hybrid of I. calathina and I. Amancaes. Light yellow. Very rare; beautiful and most desirable. \$1.00 ea.

I. macleana. A very tiny Ismene on long stems. Probably the hardiest. 50c.

I. Olympia. The giant among Ismenes and it is magnificent. The huge flowers are tinted yellow when first opened. Bulbs become very large and propagation is slow, hence they are expensive. Price, \$2.50.

I. Advance, Improved form of Calathina. \$1.00.

Ismene Collection. One bulb of each, 6 varieties, \$6.25.

Sprekalia formosissima. Jacobean Lily. Orchid Amaryllis. Aztec Lily. Type variety. A well known, half hardy Amaryllid. Can be grown in pots or in the garden. In the far north, it can be dug and stored in the fall like Gladiolus. Bright scarlet, large flowers, somewhat orchid like in form. Seedlings vary in color. 75c.

S. formosissima superba. A larger form. 75c ea.

Tulbaghia violaceae. Small cousin to Agapanthus. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. 5 for \$1.00. \$2.00 per doz. Delivery all year.

T. fragrans. This much larger species has a large, true bulb, with glaucous green foliage. 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room, with a few flowers in summer. It was introduced to this country only a very few years ago. It has larger, more fragrant flowers than violaceae in the same color. Evergreen. Since it increases rapidly the bulbs are a good investment for dealers or for plant exchanging. \$1.50. Delivery all year.

Zephyranthes. Fairy lilies. The smallest Amaryllid, 6"-12" tall. Fine in beds or borders. Hardy in middle south. In north dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould or peat. Full sun or slight shade.

Zephyranthes candida. Pure white, evergreen. The masses of white flowers in late summer make them outstanding in a bed or edging for border. Half hardy and easy in pots. 2 for 25c. \$1.00 per doz.

Z. grandiflora. The largest Zephyranthes. It is very easy to grow. In the south, its habit of flowering every time it rains in summer gives it the name of Pink Rain Lily. 20c. Per doz. \$1.50.

Z. rosea. Small, but very lovely deep pink flowers. They do not do well in very alkaline soils. It should be neutral to mildly acid. Fine in pots, about 8 or 10 in a 5" pot. 15c ea. 10 for \$1.25.

The Alliae, or Onions, are now classed in Amaryllidaceae. The following are ornamental and useful for seasoning salads, soups or meats.

Allium schoenoprasum. True Chives, Small clumps, 10c. 3 for 25c.

A. tuberosum. Japanese Garlic. Deliciously flavored leaves. Evergreen and probably not hardy in north. 25c. (Try wintering in a pot.)

IRIS FAMILY — Iridaceae

The Iris is the type genus of this family. Bearded Iris and Gladiolus are the outstanding members. Maricas are lovely and curious house plants, truly "out of the ordinary."

Tall Bearded Iris. No garden is complete without Bearded Iris. Our small "Iris 400, Price List" includes only aristocrats. It includes complete culture information and tells you how to get a profusion of flowers **every** year, not every other year. Price 10c. **Special Offer.** If you do not care for names, we offer surplus rhizomes from this lot, 20 to 30 var., no labels, 100 for \$10.00, f.o.b. express. If by mail, send postage for 12 lbs., you will get larger plants by express. Orders will also be filled from the price list.

If you are in the Los Angeles area, come and see our Iris about Mar. and April. We hope to arrange a special sale at low prices, and dig the plants for you to take home. At the same time, see our Amaryllis, African Violets and other fine things for your garden.

GLADIOLUS

How To Grow Gladiolus. Glads planted Jan. 1 to Mar. 1 in Southern California and throughout the south (a little later in Northern California and early as possible in spring in the east) are reasonably sure to escape the attack of thrips.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with Chlordane. A hand duster and Chlordane can be bought from most local feed or seed stores. Chlordane tho toxic is safe to use but do not use on vegetables. Be careful not to breathe much of the dust. It also kills ants, cut worms, wire worms, etc.

Dust Gladiolus 3 or 4 times before flowering. Begin when plants are 6" or 8" tall.

If you cannot get it locally we can supply 1 lb. package for \$1.00, post paid. If in an express shipment price 60c. This Chlordane Kil Dust 5 kills nearly all pests.

Many will prefer to spray instead of dusting. For a spray use "Thripocide" which we list under "Garden Supplies," 4 oz. for \$1.15 postpaid.

Plant large bulbs (really "corms") 4" to 5" deep. Half inch bulbs, 3". Bulblets 2". Twice their diameter apart. Rows 20" apart, in full sun exposure. Best soil is sandy loam but they do very well in heavy soils, especially if leaf mould and compost is added. Alkaline soils do not produce good Gladiolus. Correct them by addition of peat or leaf mould. Use only well decayed manure, if any. Spoonit is an excellent mildly acid fertilizer.

Sizes. Size No. 1, 1½" up. No. 2, 1¼" to 1½". No. 3, 1" to 1¼". No. 4, ¾" to 1". No. 5, ½" to ¾". No. 6, all under ½". In the following list L. means large, No. 1 or 2; M. means medium, No. 3 or 4; S. or small are No. 5 or 6. Smallest sizes bloom and often bulblets. Nos. 2 and 3 are preferred for growing commercial cut flowers.

Prices are for one bulb. Multiply by 10 for price of one doz. 6 at doz. rate. 100 cost 70 times the cost of one or 7 times the cost of one dozen.

Our bulbs are grown in rich soil, on the heavy side. They are not always as nice looking as bulbs grown in the thinner sandy soil. They often perform better and we guarantee them to grow well. They are priced lower than usual prices.

Burma. Heavily ruffled, deep rose. L. 7c.

Capeheart. Early salmon rose. L. 6c.

Columbia. Much like Corona but better, prettier and bulbs are healthier, not easily infested by rot. Creamy white with rose picotee edge. #3 bulbs, good bloomers, 45c ea.

Connecticut Yankee. Reddish pink. A new favorite pink. L. 12c.

Debonaire. Tall, early pink, long used for cutting. L. 6c. M. 5c.

Elizabeth The Queen. Deeply ruffled, large lavender flowers. Many call it the world's most beautiful. Its fault is that only No. 1 size produces long stems. No. 1 bulbs are heavier and cost more postage. No. 1, 10c. \$1.00 doz.

Ethel Cave Cole. One of the very best pinks. Much used for cut flowers. It is a pure color, very large flower of perfect form and early blooming. Size No. 1 blooms earliest, 10c. L. 7c.

H. B. Pitt. A very fine, large orange pink. 10c.

June Bells. Earliest white. Tall with large ruffled flowers. L. 12c.

Mauve. We raised a seedling of this unusual color and like it. Some florists like it, others do not. Flowers are not large and only 4 or 5 open at once. Price 50c ea. Return all stock next fall for credit if you do not like it.

Phantom Beauty. A new beauty for exhibition or cutting. Large clear pink, 12 open at one time. L. 12c.

Poinsettia. New, ruffled, pure light red with no markings. Opens 5 to 7 at once. Growers all say it is the coming florists red. Young bulbs, good blooming size, No. 3, 50c.

Red Charm. Finest pure red at present on cut flower market. L. 7c.

Red Unknown. A fine early red. Name lost. L. 6c.

Spic and Span. Ruffled deep pink. Most vigorous. The large bulblets give good spikes. L. 8c.

Timor. Medium red, unusual shade. Beautiful. L. 12c.

White Gold. Largest, tallest, earliest creamy white. A one spike bouquet. L. 8c.

Assorted Varieties. Included are small or surplus stocks, lost labels etc. but not a balanced mixture. No. 1 and jumbos, \$1.00 doz. Nos. 2 and 3, 50c doz. \$3.50/100. If we pay postage we must send nearly all No. 3's to zone 4 and farther. Smaller, blooming sizes, \$2.50/100. **Bulblets**, mixed only, \$1.00 per pint.

Miniature Gladiolus. Like a miniature carving, a cameo or fine lace, they are dainty, beautiful and alluring. Fine for cut flowers. All are good blooming size bulbs.

Crinklette. Ruffled orange pink. 15c. \$1.25/doz.

Fairy. Light lavender pastel. Dainty. 15c. \$1.50/doz.

Fairy Fancy. Cream and very nice. 15c. \$1.25/doz.

Kriss Kringle. True Christmas red. 15c. \$1.25/doz.

Oberon. Fine scarlet. 15c. \$1.25/doz.

Ruby. Early, ruby red. 20c. 3 for 50c. \$1.75/doz.

Snow Baby. A very fine white. 15c. \$1.25/doz.

Sub Deb. Early pure white. 15c. \$1.25/doz.

White Butterfly. By Kunderd. Early white. 20c. 3/50c. \$2.00/doz.

White Lace. New. Heavily ruffled white. 25c. \$2.75/doz.

Assorted Colors, miniatures, in endless variety. Special price, 10c ea., 95c doz. You can afford a lot of the mixed and a few of the named. This is a genuine bargain as these are all named varieties, accidentally mixed.

Neomarica, (Marica) have long been favorite house plants in the north, but rather rare. They are both curious and beautiful. The blue and white flowers on the tip of a leaf like scape in Jan. to April are followed by small plants. They become heavy and the scape arches until young plants touch the soil and take root. Hence their common names, Walking Iris and Apostle Plant. **Culture:** Shade plants but they need early and late sun to induce flowering. Soil formula, sharp sand, leaf mould and peat or sphagnum. Evergreen. Keep well watered, constantly wet. Tolerant to temperature but 50° to 70° is good. Not harmed by 28°, outside.

Neomarica gracilis. Smallest and earliest. Use 5" pot. 75c.

N. Northiana. Larger plant and flowers, slow propagator. Use 6" pot. \$1.75.

N. Hybrids. We crossed the above species and raised plants with flowers as large as Northiana, as profuse as gracilis and plants midway in size. They are rapid multipliers. \$1.75. All 4 kinds for \$3.75.

We have two other species under test but not for sale. A friend in Brazil is trying to locate a rare yellow species. We hope to introduce desirable species or hybrids later.

LILY FAMILY — Liliaceae

The type species is *Lilium*, or true Lily. Many call *Crinums*, *Callas*, *Cannas*, or any bulbs "Lilies," but this is an error.

Gloriosa. Climbing Lily. The flowers resemble true lilies but surpass most of them in their gorgeous beauty and high coloring. They propagate by tubers instead of bulbs. The stem is branching and heavy and must be supported. Small tubers flower well but the larger ones will give 2 or 3 times as many. They also make much larger and more showy plants.

Culture. They must have the good drainage of very sandy soil, to which it is advisable to add peat liberally. Leaf mould will do, but is not quite as good. If soil is heavy, dig out to a depth of 1 ft. and fill with 1 part top soil, 3 parts coarse sand and the peat. Plant tubers as soon as weather is quite warm in a horizontal position, 3" or 4" deep and mix a liberal portion of peat with soil close to tubers. We have grown them in rather heavy soil but with a very large quantity of peat added, but sandy soil is much better. Gloriosas prefer full sun exposure but will do well in slight shade. They like heat and abundant moisture. Lack of either will slow them down. Do not plant until very warm weather arrives. They can also be grown in large pots or, better still on a bench of soil 8" or 10" deep.

Gloriosa rothschildiana deserves the name **'Glory Lily.'** Very vivid colors, red with yellow markings turning later to deep red, in a true lily form. Flowers are long lasting and are used in corsages. Plants 4' tall. Three sizes, \$1.25, \$2.25 and jumbo size for \$3.00. The largest size makes a very large plant, with many earlier flowers. It will be the center of attention in your garden.

OXALIS FAMILY — Oxalidaceae

Culture. *Oxalis* do best in sandy soil. They do very well also in poor soil. In pots, the drainage should be good and some coarse sand in soil will help. Most *Oxalis* like nearly full sun.

Oxalis brasiliensis. Bright magenta flowers. Starts growing in winter and continues to late spring. Bulbs, 25c ea.

O. crassipes. Tuberous. Bright rose flowers. Evergreen and everblooming. Tuberous rooted species start slowly. Keep moist. 15c ea. \$1.00 doz.

O. crassipes alba. White variety of above. 25c ea. or \$2.00 doz.

O. Regnallii. Large, truncate leaves, reddish on under side. Trifoliate. Nearly or quite evergreen and everblooming. Large white flowers. Tuberous rooted 40c ea.

THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or *Zantedeschia*, Fancy Leaf Caladium, *Sauromatum*, *Amorphophallus*, *Arum*, *Drunculus*, *Anthurium*, *Spathiphyllum*, etc. All are shade plants and need acid soils.

Zantedeschias are not true Callas, tho this is their common name. **Culture.** At this time and up to Apr. 1, you may plant or pot the pink and yellow callas. They need a mildly acid soil or sandy loam and peat. In pots, cover only 2" but in the ground in Calif. or the deep south, they may be planted about 3" deep. They need about half shade. Keep barely moist until growth is well started, then water freely. Cool temperatures suit them best. Hardy outdoors in S. Calif.

Zantedeschia rehmanni elegans. Improved light pink form. Jumbo bulbs, about 2" diam. or over, 75c. 1½" diam., 45c ea. Blooming size, 40c. Use larger sizes for pots. Small tubers, ¾" to 1", 25c, may or may not flower.

Z. elliotiana. Deep golden yellow. If not given enough sun they become tall and spindly and fail to flower. 35c ea. 3 for \$1.00.

Z. aethiopica. White Calla, may be planted as late as March 1. 50c ea.

Amorphophallus revieri. Sacred Lily of India. Culture like Callas. Not blooming size. \$2.50.

Sauromatum venosum. Lizard Lily. Same culture. Med. size \$1.25. Blooming size (maybe) \$2.50.

Anthurium andraeanum. Until very recently these have been high in price. But now prices are really reasonable. The cordate leaves make them useful as foliage plants alone but a mature plant will flower six times a year. Flowers are calla-like, but rather flat, in glossy red, pink, orange, coral, rose and rarely white. They are much used for cut flowers in arrangements and corsages. They are ever-blooming if given correct conditions at all times, but sometimes take a vacation when very hot, very cold or very dry.

Culture. Anthuriums and Spathiphyllums are tender tropical plants, suitable only for pot culture. **Soil formula.** They will grow in most any organic compost. We use and advise one part old osmundine, (discarded from orchid pots, new will do); one part peat. Add enough Sponge Rok or coarse sand to make compost very gritty and to hasten quick drainage. See Potting Directions under General Culture. Add a thin layer of sphagnum on surface to prevent eroding the surface when watering. Set plant low in an oversized pot and as it grows, new roots are formed on compost surface which should be covered with more sphagnum. When compost surface reaches rim of pot, shift to larger pot, or build up with sphagnum. New roots must be kept covered.

Use Spoonit or liquid manure once a month, after plants are well established. The preferred minimum night temp. is 60° or over. 45° does little harm other than to stop growth and flowering. 70° to 80° is a good daytime temp. Air should be very humid. Spraying foliage daily increases air humidity. They should never become completely dry, thruout. Water about every two days.

New Deal on Anthuriums. Last fall we reduced prices on Anthuriums and offered to ship in pots f.o.b. or by mail, out of pot, for the same price. Our orders increased to a volume of several times as many plants in the same period of time. We did not receive a single complaint of plants received in bad order or of failure to grow. Therefore we are continuing this plan by which you may get the plants and save dollars. State with order, whether by mail or express.

The best way to ship is, of course by express. But rates are now away up. Plants are set back a little if sent by mail, loose roots and you must provide the compost. But they recover quickly and you save a lot on total cost. Orders for plants to go by mail will be filled as soon as weather permits. They cannot be shipped north in winter. We can send only by express in winter.

Anthurium andraeanum, Shaffer Hybrids are the best. Plants should begin to flower at 10" to 12" height. We have had 6" plants flower and very often 8"-10" flower. They grow and multiply so rapidly that we are forced to make sharp cuts in our former prices. They are really bargain prices. If you have a warm living-room or a hobby greenhouse, by all means take advantage of these offers. The figure enclosed in parentheses thus (3") is size of pot advised for the plant. **Prices, Assorted Colors,** out of pots, postpaid or established in clay pots, by express, f.o.b. Plants 3" to 4", (4"), \$1.50. 4"-6", (4"), \$2.00. 6"-8", (4"), \$2.50. 8"-10", (5"), \$3.00. 10"-12", (5" or 6"), \$3.50. The last should flower very soon. Plants over 12", that have flowered, or will flower very soon, (5"-6"), \$5.00.

Named Colors, plants that have flowered, our choice, 10" or over, \$5.50. Your choice of color except white, \$6.00.

A. crystallinum. A beautiful foliage plant that does not need flowers. Leaves are cordate-ovate to 10" wide and 14" long, deep velvety green, prominently veined white. Pale rose on underside. Blooming sizes \$2.50 and \$3.00. Smaller plants, \$1.50 and \$2.00.

Spathiphyllum Clevelandi. Close relative and formerly classed as an Anthurium. Foliage is oblong and pointed. Flowers are pure white and long, very attractive. They are easy to grow as house plants, in 4" pots. Small plants, \$1.50 and \$2.00. Blooming sizes, often in bloom when sent, \$2.50 and \$3.00. Postpaid or by express, f.o.b.

FANCY LEAF GERANIUMS

Fancy Leaf Geraniums have been having a renaissance of popularity. The gorgeous colors in their foliage surpass belief, until seen.

Culture. The Fancy Leafs are pot plants. The plants we send out are ready for 4" pots. Use only unglazed clay pots,—no plastics. Do not allow pots to stand in saucers of water. Give almost full sun for about one half day or more, strong light for the balance. If shaded much, stem rot results. Do not keep plants in a soggy condition but keep moist enough to prevent wilt.

All plants need air penetration thru the soil to their roots. Porous pots aid and friable soils are necessary. Geraniums especially, insist on this. The best soil is one that allows water to drain quickly yet retains enough for one or two days supply. Such a soil may be composed of good garden loam one part; peat, shredded or cut sphagnum, fibrous leaf mould, (or a combination) 3 parts; enough coarse sand or Sponge Rok to make the compost quite gritty. Be sure your final compost drains well. We mulch top of soil with sphagnum.

Do not add manure or fertilizer to potting soil.

When plants are received they will be in waxed paper pots, out of 3" pots. Do not use larger than 4" for geraniums as house plants. Disturb soil as little as possible. If plant is not bushy, pinch out the tip of the main stem. Water at once.

We are often told that plants arrive in excellent to perfect condition but even with expert packing, very often some of the leaves will be lost. They do not like the long dark night without fresh air. They are guaranteed to recover if our directions are followed.

Prices. If our prices are higher than those of another catalog, this is the reason. We make no packing charge. We prepay regular parcel post charges on orders for \$2.00 or over on Geraniums alone. We have bought from most of the other growers and have seen the plants. We send out much larger plants than any we have received. Most growers give no guarantee of safe arrival, but shift responsibility to the carrier. We replace plants that do not arrive in a living condition, if you handle as we advise. But you should send the fees for Insurance, Special Delivery and if wanted for Air Parcel Post. It is advisable to send by air on long distances. Express shipments are usually quite safe and Express Co. accepts responsibility.

Alpha. Dwarf. Deeply lobed, golden green leaves with narrow rust zone and large, dark, glowing scarlet flowers. \$1.00.

Crystal Palace Gem. Yellow green leaves with deeper green central blotch. Scarlet flowers. \$1.00.

Distinction. Small, round green leaves, toothed on edge, with a sharply outlined dark zone close to edge. Compact small plant. Often first choice of local customers. Cherry flowers. \$1.25.

Jubilee. Bronze yellow leaves with broad rust brown zone. Grows well outside. \$1.00.

Miss Burdett Coutts. Silvery green leaves bordered with ivory and a zone of brilliant red and brown. Easy to grow and one of the most brilliant in color. \$1.50.

Mrs. Cox. Green leaves edged yellow. The wide zone is brilliantly splashed scarlet, crimson and brown. Very rare. \$1.50.

Mrs. Pollock. Green leaves edged yellow. Wide zone splashed scarlet. Similar but less colorful than Mrs. Cox. \$1.00.

Skies of Italy. Sharply lobed green leaves with wide brown zone, splashed red. Older plants become very colorful. \$1.25.

THE GESNERIA FAMILY — Gesneriaceae

Includes Gloxinia, Smithiantha, Isoloma, Episcia, Streptocarpus, Aeschynanthes, and ending here with Saintpaulia. Many have received other names by botanists. We use the valid names approved by **Gentes Herbarum**.

Culture of The Gesneriaceae. This is one of the most distinguished plant families. The Gesneriads listed here are all tropical. They are natives from Mexico to Brazil in America or from the equator to the Cape in Africa. Most of them are warm house plants.

The culture requirements are so similar that we can generalize on most points. Any exceptions will be noted with the listings. They may be either tuberous rooted and deciduous or fibrous rooted and evergreen.

Storage of Tubers. Tubers may be left in the pots or baskets when dormant, but dry and warm, or they may be dug, dried and stored in vermiculite. Smithianthas multiply rapidly and should be divided as crowding them gives unsatisfactory results. Large tubers like Gloxinias should be shifted to larger pots usually. Most tubers may be dried off soon after flowering. Best storage temperature is about 50°.

Fibrous Rooted Gesneriads, Streptocarpus, Aeschynanthes, Episcia, Columnea, etc., are evergreen and must be kept growing all year.

Basket Culture is our method for fibrous rooted Gesneriads. Line baskets with a compressed layer of wet sphagnum. The compost for the center may be any combination of coarse fibrous peat, sphagnum and leaf mould. Well divided osmundine may, be added to make it coarser, if too fine. Peat must be wet in advance as it is difficult to wet it thruout in a basket. The compost should be coarse enough to allow water to drain freely and to prevent its retention in a dense sodden mass, which prevents entrance of air. Plants breathe. All parts need air, but do not allow compost to become dry between waterings. Keep it moist not soggy.

For plants that vine like Aeschynanthes or Columnea, we usually add enough sand to make the compost feel gritty.

Pot culture is much the better for Gloxinias, Smithiantha and those having sturdy upright stems. For pots we use a similar compost with sand, enough to make it gritty in texture and rather more than we would use in a basket. There must be plenty of drainage material in bottom of pot. See potting directions under "General Culture." When a plant becomes too large for its pot—shift to one size larger.

Fertilizing. See General Culture. We do not add fertilizer to soils or composts usually, but bone meal is good and it does not burn. A little powdered dairy or sheep manure is often used. We prefer to add pinches to surface when growing well—if we use at all. We prefer liquid fertilizers when in growth. We never use inorganic, chemical fertilizers, for anything, anywhere.

Light Exposure. Most Gesneriads are shade plants, but they do need much light and most of them like a little morning and evening sun. Light shade is needed in winter. If Gloxinias do not receive enough filtered sunlight they become "leggy," poor plants with little or no bloom. Enough sun is required by nearly all plants to make proper growth and flowers. If Smithiantha have weak stems and fall over it can result from: compost not firm enough; becoming too dry; not enough light.

Watering. Do not allow plants to become dry thruout. They should never wilt. Water when surface appears a little dry. They are natives of regions of heavy rain fall. Early morning is the best time as if sun touches wet foliage it becomes discolored and wet foliage at night is not good.

Best Temperature for nearly all is 60° to 70°. Those we list are tropicals. Streptocarpus like cool temperatures.

Gloxinias. The valid botanical name is, "Sinningia." Only the hybrids are of garden value. They are vastly different from the wild Sinningia and we do not care much for the forms, such as "Slipper type" that revert back to their wild prototype. The best Gloxinias grown in America are the product of two California firms, Antonelli and Vetterlee. Promotion and advertising cannot change this fact. This applies to the named varieties, Emperor William, etc., as these are reproduced from seed and are variable. The California growers have greatly improved these old varieties and they are far better than the imported or any other American grown tubers.

There are great Gloxinia breeders in Europe and the variety Pointille, probably a

variant of Tigrinia is one of their best. It is sometimes offered here under a different name and at a high price.

The Old Time Ten, in new, improved colors. California grown, $1\frac{1}{4}$ to $1\frac{1}{2}$ " tubers, in the following sorts: **Blanche de Meru**, rose, white throat; **Emperor Frederick**, scarlet, white border; **Emperor William**, violet, white border; **Etoile de Feu**, scarlet; **Mont Blanc**, pure white; **Prince Albert**, frilled, dark violet; **Princess Elizabeth**, blue, white throat; **Roi des Rouges**, frilled, dark crimson; **Tigrina**, from light rose to dark lavender. Characteristics are the small tiger spots; **Violaceae**, soft violet. Size $1\frac{1}{4}$ " - $1\frac{1}{2}$ ". Price 40c ea. 6 all of one kind or assorted in one bag, \$2.00. Complete collections, 10 var., separately labelled, \$3.75. Two collections, one from Vetterlee, one from Antonelli, \$7.25. Only in this collection, will we label the source.

Newer European Hybrids. Pointille, large flowers in many shades but all are spotted, similar yet different from Tigrinia. \$1.00.

Rose Sensation, brilliant carmine rose, \$1.00.

Antonelli hybrids: **Blue**, **Burgundy**, **Crimson Rose**, **Pink Edge** and **Salmon Rose**. The names describe the colors. Price 50c ea. 6 of one kind or 6 assorted in one bag for \$2.50.

One each of the European and Antonelli hybrids, 7 tubers, assorted sizes as available, labelled separately, \$4.25. **One of each**, all **Gloxinias** listed, 17 varieties for \$7.75.

Gloxinia Seed, **Houdyshels**, saved from our named varieties, assorted. This contains the largest number of seed. **Antonelli hybrids**, from their best new varieties, assorted. 10 or more seed. **Beacon**. Rich dark red flowers. This and the following named varieties come true to name. **Crimson Glow**. Name describes color. Free blooming. **Rose Sensation**. Brilliant carmine rose. **Swiss Emblem**. Brilliant scarlet red, white margin. Your choice of packets 50c ea. The 6 packets for \$2.75. The number of seed in each packet is in proportion to their unit value and from 10 to 75 or 100. Tho tiny, every seed grows. Send stamped, addressed envelope for all seed packets.

Culture. Place fine grained vermiculite or terralite in the bottom of a plastic refrigerator dish $\frac{3}{4}$ " deep and moisten well. Plant seed very thinly over surface. Keep covered with lid until plants are ready to pick out. One must make sure that moisture does not escape and add water if it does. They may be picked out and transplanted into 2" pots after second pair of leaves develop. We also plant seed in 9" pans, half filled with peat and milled sphagnum. When planted cover pot with glass. We grow many rare seeds by either method, including African Violets. Gloxinias flower at about 5 months.

Streptocarpus are very close relatives of Gloxinias but are fibrous rooted evergreen and can only be moved as growing plants. The culture is much the same except as to temperature. They thrive in a cool house and are easily grown in a lath house in summer. The color range is similar. The flowers are smaller and freely produced. They are followed by long twisted seed pods, hence their name. \$1.00 ea.

Streptocarpus seed. No one leafed types included. Assorted colors from fine strains. Handle as advised for Gloxinia seed. Plants should flower by late fall. Per packet, \$1.00 and self addressed stamped envelope.

Episcias resemble African Violets in form and other ways, yet are entirely distinct. African violets flower profusely. Episcias are very showy foliage plants and flower but once a year. They are natives of the American tropics, not African. Their flowers are solitary or clustered, not in cymes as in African Violets. The resemblance is casual, not botanical. But their red flowers and general contour of the plants have resulted in promotion of *E. coccinea* as a Red Violet. They are very tender tropicals and should not be colder than 60° . At about 50° they are badly damaged or killed, hence cannot be shipped when likely to encounter temperatures under 50° . They make stolens or runners like a strawberry and new plants are made in a similar manner. We plant in baskets of sphagnum and hair pin the little plants on stolens to sides and bottom of basket. Or stolens may be allowed to hang as jewelled pendants. Flowers are usually bright scarlet and foliage usually villous, or hairy and velvet like. They may also be grown in pots. Either way they require constant moisture. When you receive the plants do not remove or tear apart the mass of sphagnum which contains their delicate roots. Plant the entire mass.

Episcia chontalensis, a small variety with green leaves. Flowers lilac or white. \$1.00. **E. Coccinea**, so called in the trade but probably is *E. cupreata*. Brownish, hairy leaves, silvery veined, scarlet flowers. \$1.00. **E. cupreata, var. Silver Sheen**. A broad silver sheen in center with dark green border. Flowers scarlet. \$1.00. **E. Lilacina**, bronze leaves, \$1.00. **E. splendens**, large, bright green leaves, broad veins of silver green. Scarlet flowers. A very lovely variety. \$1.00. **E. Sport** is probably an unidentified species. Flowers close to yellow. \$1.00. Collection of 6 var. for \$5.50. Order any time. We deliver as soon as weather permits.

Aeschynanthes is now the valid name for the former Trichospornum. The authority is Gentes Herbarnum, Cornell University publication. Fortunately, amid the vicissitudes of nomenclature changes, the plants remain unchanged. This is a nice trailing, almost woody vine. In nature, they are said to be epiphytal and to climb trees. If they do, I envy the monkeys in those trees as the plants are attractive and the freely produced large flowers are tubular and vividly colored.

They are tender tropicals and shipment will be made only when weather permits. We grow them in wire baskets, lined thickly with sphagnum and with peat and sand in center. They can be grown in pure sphagnum. They do not do as well for us in pots. They require constant moisture. Leaves and flowers drop when dry. I cannot promise flowering dates as we have had flowers on some for the last six months.

Correction. Much research has convinced us that the plants we received and have been selling under the label of *Aeschynanthes pulchra* are really *A. Lobbiana*. Please change your label. *A. pulchra* has a green calyx. *A. Lobbiana* has a purple calyx.

A. Lobbiana. Flowering size plants in 8" or 10" baskets, by express, f.o.b. \$3.75. Safe to ship to north by March 1.

Smithiantha. (Naegelia) are fine, tuberous rooted, foliage plants. The rounded cordate leaves are covered by soft hairs that give a velvety appearance and cause them to change colors when viewed at a different angle. The showy flowers are long, tubular and in pink and orange shades. Minimum temperature 60° for best growth.

Smithiantha zebra. The leaves are mottled and veined red brown. Two types. **Orange flowered**, 50c. Largest tubers, \$1.00. **Pink flowered**, 75c and \$1.25 each.

S. cinnabarina. Gorgeous dark red velvety leaves, cinnabar red flowers. 50c and \$1.00 ea.

S. hybrida, Orange King. Very beautiful leaves with changeable colors. We have fewer, hence 75c and \$1.25 ea.

S. hybrida, Orange Delight. Foliage mottled red-brown. Flowers orange outside, yellow, spotted orange inside (as most of them are). 50c and \$1.00.

Collection of all 5 varieties, smaller tubers. \$2.75. Larger tubers, \$5.00.

Columnea. The following are epiphytic vines with red or yellow tubular flowers, that do well in baskets, in sphagnum or peat and sand. **C. gloriosa** and **C. microphylla**, in 8" baskets, \$2.50 ea., express, f.o.b. or loose roots, \$2.00, post paid. **C. Alleni.** Slow grower for me. In basket, \$3.00 f.o.b. Rooted cutting \$2.50 post paid. I have seen flowers of *C. gloriosa* only. It seems to be the most profuse grower and bloomer.

AFRICAN VIOLETS — Saintpaulias

The latter is the correct botanical name. They are the most popular of all house plants at the present time and they are likely to retain this eminent position in popular favor indefinitely, as they deserve it. Reference to their popularity as "The African Violet Craze" is unintelligent, because it fails to recognize the especial appeal of these little plants and their adaptability for house culture. It fails to recognize the health giving value, physically and mentally of a hobby and especially of gardening. Saintpaulias appeal to all classes, all ages and to both men and women. If this be a mania, Mrs. Houdyshel and I are glad to be victims. As long as human souls love dainty beauty, African Violets will be popular.

Culture. African Violets under the hand of man have been vastly improved and diversified and many new colors and forms have been produced. New species have been discovered. They have also adapted themselves to somewhat different conditions from those found in nature.

The advised range of temperatures for winter is 60° at night and 70° daytime. They might do a little better at 10° higher but that is uncomfortable for people in winter clothing and summer brings about 10° increase, in our living rooms.

The plants do not like sudden changes nor great changes. A nearly even temperature, within a limit of 12° between high and low is better. They are bound to have a greater range sometimes and if not more than about 15°, they are unlikely to lose their flowers. Loss of flowers is the first evidence of something wrong. This may result from sudden changes, drafts, too high a temperature in summer and in winter it may result if temperature goes much under 60° for more than an hour or two. Or it may result from too low relative humidity. This should be 40 to 60%.

African Violets grown at a congenial temperature are usually killed if subjected to lower than 40°. Therefore it is impossible for us to send you plants by mail in winter, to a cold climate. In favorable weather we can usually send to warmer sections of the south. Express is safer. Nor do we ship on very hot days in summer. We plan to ship so that they do not arrive to you on a week end and thus remain in a carton a day or two longer.

Watering. Do not use cold water. The water should be near the room temperature and never over 10° lower or higher. Most of our watering is done by spraying with a hose. The plants need to have the foliage sprayed and it does not spot the foliage if no sun falls on the foliage before they dry off. The interval between waterings should be long enough to permit the top soil to become slightly dry. Do not use pots that have no hole at bottom for drainage. Use sub-irrigation infrequently. We prefer regular pot watering rather than use of wicks.

Good ventilation is needed by all plants but Saintpaulias do not like drafts. Slow movement of air currents are more conducive to their comfort.

Soil formulae. Plants have a considerable tolerance and do well in a wide variety of soils. They should be at least mildly acid in reaction and a type that will drain easily and quickly. Heavy clay soils, therefore, are not good.

We use about one half oak or redwood leaf mold and one half sandy loam or good loose garden loam. To this is added enough Sponge Rok or coarse sand to make the soil gritty and aid drainage. Fine screened peat is as good or better than leaf mold.

If you are unable to supply your own soil mixture, the best we know about is Black Magic which we list under supplies. We believe this may be stretched and really improved if one should add an equal portion of very gritty sandy loam and fine rotted leaf mould. But if added, you must sterilize this additive in the oven to get rid of soil bacteria and nematode.

Fertilizers. We use only Spoonit and recommend it to be applied once a month, on a day following watering. See our listing under Garden Supplies.

Sun exposure. Most of the advice one receives over-emphasizes shade. Lack of sufficient light intensity is one of the most frequent causes of non-blooming. All shade plants need a certain amount of modified sunlight to make them flower. In the winter, the sun is at a low declination. Its rays must pass thru several times the thickness of atmosphere penetrated at noon in the summer when the sun is directly above or at "high declination." Very little shading is needed on the greenhouse in winter. Treated thus, our plants bloom profusely all winter. Very likely, plants in a south window, anywhere in the north temperate zone, in winters, will be sufficiently shaded on the brightest days by a thin muslin curtain. It may not even be needed at all and on days of less than maximum intensity remove the shade.

But summer sun is much stronger. One must give more shade. It should not, however, be too heavy. The color of the foliage will tell you what they can endure. When healthy plants have light, yellowish foliage they probably receive too much sun.

Medium green is about right. Very dark green foliage indicates insufficient light and lack of flowers corroborates it. For checking, select a plant having green foliage, under normal conditions, not a dark foliage plant like Holly or Pink Delight nor one like Frosty having ivory or white areas.

If your Saintpaulias do not flower altho they grow well and appear to be healthy, you need to check on all points we have mentioned. Light intensity and duration are important. In the far north we have customers near the Arctic Circle where there is full daylight only in summer. Here the only possibility of winter flowers is the use of artificial light. They express interest in fluorescent lighting. Mrs. Rector, in How To Grow African Violets (which you should have,—see our book list), says that an 80 watt fixture, 18" above the soil, has been found to give good growth and free flowering. Greenhouse growers who force lilies for Easter are able to advance the blooming date by the use of electric light. Any kind of light will do provided the plants receive 15 to 30 foot candles (as measured by a photographic light meter) for 12 hours duration, daily. This should be tried in the northern states where winter days are short and dull.

Humidity. The humidity of our houses is likely to be not much over 25%. One can increase the humidity around the plants sufficiently by setting the plants in saucers or in a long tray that will hold several pots. A chick feeder with guards removed makes a good tray. These may be partly filled with small gravel. Set pots on top of gravel and pour in water until it does not quite touch pots.

Pests. Be sure to keep your plants free of insect pests. One of the most common on house plants is the **mealy bug**. Examine plants frequently for pests. Mealy bugs look like tiny specks of cotton. One way to remove and kill them is to use a bit of cotton on the end of a toothpick. Dip the cotton in alcohol and pick off the bugs. Do not touch foliage with the alcohol. Wonder Garden Spray, used as a spray is effective. A badly infested plant should be discarded or at least removed from the vicinity of all other house plants. All effective insecticides are poisonous. You must not breathe the fumes. You must avoid skin contact. See our listing.

Cyclamen mites are most destructive. The center of an infected plant takes on an abnormal appearance and changes to a different color, usually grey. It becomes rough in appearance and young foliage is misshaped. Mites spread to all the plants and effective measures must be at once applied. We have found the most effective remedy is to spray with Wonder Garden Spray, which is listed under "Supplies." Immediately remove infected plants into quarantine. Do not handle infected plants, then healthy plants.

Customers are invited to visit our nursery when in Los Angeles area. Drive east on Garvey, N. on Azusa, E. on Arrow Hwy. to Esther St., S. one block, or take La Verne bus. Get off at Firey and walk west one block to Esther. Then south one block.

Distant states, Hawaii, Alaska, Cuba, Europe, etc., should include enough for delivery by Air Parcel Post. We have shipped as far as Denmark, nearly 6,000 miles, this way and plants arrived in almost perfect condition. They did not quit blooming. We charge the customer the excess of Air Parcel Post above the cost to our 8th postal zone. Please state in your order that you will pay the difference promptly if your estimate is too low. But send your estimated amount with order.

We usually succeed in delivering plants in excellent to perfect condition. We guarantee our plants to arrive in a living condition.

OUR NEW INTRODUCTIONS

Inamorata. Beautiful, large, white, double flowers with slight color in the center. It is the best white double we have seen. Leaves ovate. \$2.50 ea.

Lavender Delight. Large double. Flowers light wisteria violet, deeper color in center. Leaves forest green, quilted. \$2.50.

Los Angeles. Flowers are very large, hortense violet. Leaves ovate, medium green and quilted. The flowers are large, freely produced and fully double. \$2.50.

Pink Adorable. Flowers rosolane pink with much darker center, sparkling like

jewels. Flowers 1½" and larger, are held well above foliage. Leaves sub-cordate, velvety green, slightly lighter on edge. Ready late spring. \$2.50.

We are introducing four new varieties, originated by Carolyn Rector.

Caracol. Med. green, girl leaves which often curve at the base into a snail-shell twist. Flowers blue-violet. \$2.50.

Narbonne. Rather flat growth, long shiny girl leaf with large white spot, on medium light green. Leaf edges are curved over, scoop like. Flower is violet #3. \$2.50.

New Dawn. Upright growth. Heart shaped, rather pointed leaves on moderately long stems, med. light green, slightly scalloped. Reddish orchid flowers. (Violet-red #4 from color chart.) \$2.50.

Pacific Shadows. Dark shiny leaves. Growth flat. Flowers brilliant blue, well above foliage. Striking when grown in strong light. \$2.50.

Species.

Saintpaulia Diplotricha Supreme. Free blooming, deep violet. Supreme habit. Loves moisture. \$1.50.

S. Grotei. Trailing stems, nice for hanging. They like large pots and light feeding often. \$1.50.

S. Orbicularis. New. Dwarf. Many small light blue flowers. \$2.00.

S. Tongwensis. A jewel. The very glossy leaves make the plant especially attractive. Flowers light blue with darker eye. \$1.25.

GENERAL LIST

Azure Beauty. Beautiful double fls. white with lav. or blue markings. \$1.25.

Blue Eyed Girl. White flowers with blue eye. \$1.25.

Blue Ohio. Very large dark blue fls., small, heavy, thick leaves. \$1.50.

Blue Triumph. New. Very large dbl. med. blue flowers. Quilted foliage red underneath. \$2.50.

Blue Warrior Supreme. New. Bright blue flowers. \$2.50.

Brenda Girl. New. Argyle Purple to Bishop's Purple in center. Dark green leaves, white center and edges deeply serrated. \$2.50.

Bronze Frinette. Fls. spectrum violet. Lvs. round, crenated, very dark bronzy green, red underneath. \$1.50.

California Dark Plum. Very much like Plum Glory. Plum red flowers. \$1.50.

Carmen. One of the best reds. \$1.50.

Corsage. Large light blue very double flowers. Sm. \$1.00.

Double Lace. (Dbl. Fringed White). Very lovely double white. \$2.50. Sm. \$1.00.

Dream Girl. Varigated, white bordered with blue. Lovely foliage. Very popular. \$2.00. Small \$1.00.

Evening Sunset. A light blue, with an overcast of pink that predominates in the upper two petals, like sunset and blue sky. \$2.00. Sm. \$1.00.

Fairy Queen. (Hendrix) Dupont type lvs., fls. very large. Light hortense violet. Violet-purple eye and edge. \$1.50.

Fantasy. Lavender, variegated and splotched flowers. \$1.25.

Fantasy Girl. Like above but has girl foliage. \$1.50.

Frilled Blue Delight. The petals are frilled. White edged with blue. Sm. \$1.25.

Frosty. Variegated foliage, like a mound of snow spilling from a green salver. \$2.50. Sm. \$1.25.

Geneva Beauty. Excellent new variety. Foliage similar to Mentor Boy. Purple flower, white edge, does not fade. \$2.50.

Geneva's Daughter. Light blue, white edged flowers, girl foliage. \$1.25.

Geneva Pink. Very large dark flowers. Supreme foliage. \$1.25.

Gorgeous Rainbow. New. Similar to Dark Beauty. Double, variegated fls. \$2.00.

Grotei hybrids. Morning Dawn and Morning Mist are included in these. Should be grown in large pots. They branch, making a large plant. \$1.75.

Holly. (Keller) Lvs. dark copper green, Holly shaped, purple underneath. Small plants only \$1.00.

Indianola. Fls. bi-color. Very dark green foliage with red under side. \$1.25.

Inspiration. Very large blue-lav. fls. supreme foliage. \$1.50.

Lavender Beauty. Lovely silvery mauve flowers. Very large \$1.25.

Minuet Girl. Minuet blue. Lovely girl foliage. \$1.25.

Moonlight. Leaves deeply crenate, very pretty. Fls. light blue. \$2.00. Sm. \$1.00.

Orchid Geneva. Fls. orchid with white edge. \$2.00.

Painted Girl. Snowy white, glistening as if covered by diamond dust, bordered by orchid. The flowers are perfect gems. Very popular. \$2.00. Sm. \$1.00.

Pink Attraction. Lovely large round flowers with rosy eye. Good foliage. \$1.50.

Pink Cheer. Deep pink flowers. \$1.25.

Pink Fantasy. Pink fls. shaded an intense cerise-red in throat. \$1.50. Sm. \$1.00.

Pink Shocking. Very large deep pink fls. rather long in shape. \$2.50.

Pink Wonder. Patented. Most beautiful deep pink. Very large round fls. \$2.50. Sm. \$1.25.

Portland Rose. A vivid shade of rose with darker eye. \$1.25.

Purple Knight. Excellent large, free flowering. Bluish purple. \$1.25.

Purple Lace. Flowers blackish violet and frilled. Foliage frilly with red underneath which shows thru. \$2.00.

Purity. Double white. \$1.25.

Red Lady. Exceptionally clear color which does not fade. \$1.25.

Red Princess. An outstanding red. Crimson wine red. \$2.50. Sm. \$1.25.

Rose Rainbow. Dbl. rose and white variegated. Very desirable. \$1.25.

Royal Girl. Deeply cut fancy girl leaves. Royal blue flowers. \$1.00.

Ruffled Beauty. Ruffled girl foliage with highly serrated edges. \$1.25.

Ruffled Queen. Color, blue burgundy, with ruffled, frilled petals. \$2.25. Sm. \$1.25.

Silver Moon. (Rector) Lovely new white. \$2.25.

Silver Snow. Variegated foliage. \$2.50.

Spooned Orchid Sunset. Double. Grown from plant with spooned foliage. \$2.00.

Sunrise Supreme. Supreme foliage. Very large flowers. \$1.50.

White Madonna. New double white. Won blue ribbon at National Convention, 1953. \$2.50.

Wintergreen. New. Beautiful variegated foliage. Fls. dbl. var. blue and white. \$2.50.

Beginners Collections. Our selection one plant \$1.00, 2 for \$1.75, 3 for \$2.50, 5 for \$4.00.

Please be sure to add Sales Tax to Calif. orders for African Violets.

African Violet leaves. 75c ea. \$7.50 per dozen. Please give several substitutes.

Black Fringe

Fantasy Supreme

Silver Moon

Blue Beau

Fischer's Eclipse

Silhouette

Blue Triumph

Frilled Dupont

Springfield Beauty

Brenda Girl

Frosty

Snow Line

Christmas Star

Holly

Star Glow

Double Lace

Moonlight

White Caps

Leaves. 50c ea. \$5.00 per dozen.

Apple Blossom

Calif. Dark Plum

Lovely Lady

Azure Beauty Improved

Corsage

Orchid Geneva

Alma Wright

Easter Bunny (Dwarf)

Pink Attraction

Beauty Girl

Edith

Purple Lace

Betty

Evening Sunset

Ruffled Beauty

Blue Ohio

Indianola

Ruby Jewel

Blue Warrior Supreme

Innocence

Twilight

Bronze Fringette

Lacy Girl

Sunrise Supreme

African Violet Leaves. 35c ea. 3 for \$1.00. 12 for \$3.00. Over 12 leaves, 25c ea.

America	Gypsy Apple Blossom	Pink Delight
Amethyst	Gypsy Ice Girl	Pink Girl
Apollo (Dbl.)	Gypsy Jewel	Pink Lustre
Baby Blue Eyes	Gypsy King	Poncho
Black Beauty	Gypsy Prince	Portland Rose
Blue Charm	Gypsy Queen	Purple Dawn
Blue Eyed Girl	Heart's Delight	Queen Betty
Blue Heiress	Helen Wilson Bouquet	Red Girl
Blue Jewel	Ionantha Grandiflora	Red Lady
Blue Lady	Juno	Red Moire
Blue Moire	Lady Grace	Rose Crinkles
Bronze Bicolor	Lady Loreta	Rose Marie
Bronze Girl	Lavender Beauty	Royal Girl
Charro	Lav. Pink Princess	Royal Ripples
Christina	Marine	Ruby Bouquet
Delight (Dbl.)	Minuet Girl	Sea Girl (Dbl.)
Dimples	Moro	Sherry Girl
Double Rose	Navy Bouquet	Spoon Girl
Dupont Lav. Pink	Norseman	Supreta (Red)
Dupont 1; 2; 4;	Oak Leaf Girl	Taffita
Evelyn Banks (Pink)	Opal Girl	Temple Belle
Evening Star	Orchid Velvet	Temple Pink
Fairy Boats	Orchid Wonder	Tear Drop
Fairy Tales	Painted Ballerina	Tom Thumb
Gaucho	Pansy Beauty	Velvet Girl
Geneva Pink	Perfection (Dwarf)	Western Girl

BEGONIA FAMILY — Begoniaceae

How To Grow Tuberous Begonias. No plant or flower is more beautiful than that of a well grown Tuberous Begonia. They may be grown in pots or in the garden in most states. They are semi-tropical but do not do well in the tropics. Florida customers have reported failure.

In Calif., south of San Francisco, they do best near the coast but we grow fine plants and flowers in this hot, dry inland valley by cooling them off by daily sprinkling plants. Our flowers tho are smaller than those grown in cooler areas. Water hurts neither foliage or flowers. The best place is in a lath house, north of a building or under trees, here.

Worth Brown, in his book on Tuberous Begonias, (which you should have, see our listing under "Books") recommends them also for pot culture in the house or greenhouses. The tubers we sell should have 7" pots

A loose sandy soil containing much well rotted leaf mould is best. For pots, one may use $\frac{2}{3}$ leaf mould and $\frac{1}{3}$ rich, very sandy loam. If not very sandy add enough sand to the mixture to make it quite gritty. Most commercial growers add a very small portion of dry, powdered steer or sheep manure or well rotted stable manure. It should not be close to the tuber. Do not venture to be liberal. It is probably safer to use liquid fertilizer like Spoonit when plants are well advanced in growth. It is safe to add a tablespoonful of bone meal to each pot.

Do not pot or plant tubers until a sprout appears. A famous grower advises they be spread out in a warm, dark room, the eye up, for sprouting and that moist sphagnum, is unnecessary. For potting directions see general culture. Pot or plant sprouted tuber, covering entire tuber.

Begonias are shade plants but to bloom well they should have all the sun they

can stand without burning. In early morning and late afternoon. For the rest of the day 50% is about right, here. The proportion varies with latitude and climate.

Begonias like moisture but do not over water starting tubers or small plants. It is a good plan to dust tubers with sulphur to prevent mildew. If it starts, use sulphur.

If you want fine large flowers, pinch off all but one sprout on tuber,—except on the Lloydii. Dropping of buds may be caused by mildew, overwatering, lack of fresh air circulation, too dense shade or too hot.

We list 1 $\frac{1}{4}$ "—1 $\frac{1}{2}$ " tubers, a medium size. The size of tubers does not govern size of flowers. Even small tubers produce full sized flowers, but smaller plants. Culture does affect size of flowers and plants. For the best reference book on Tuberous Begonias get Worth Brown's book listed in this catalog.

Imported Begonias. Be sure you do not purchase them. They are fine looking tubers but produce poor flowers. The great improvements made in recent years are wholly due to a small group of California growers, including Brown, Antonelli and Vetterlee. We list only their Begonias, selecting from each, the types for which they are especially noted.

Prices. Please note that the dozen rate applies only when 6 or more tubers of one kind or assorted are packed in one bag. If separately labelled, 12 tubers take the single rate as is our rate on all bulbs.

Giant Double Camellia Flowered. Ten colors: white, pink, rose, American beauty, yellow, apricot, salmon, orange, scarlet, red. Price 30c ea., six, one color only or assorted in one bag, \$1.50. The ten var., in one bag for \$2.60.

Giant Ruffled Double Camellia Flowered, by Antonelli, nine colors: White, rose, scarlet, red-salmon, blush, apricot, pink, yellow, cardinal. 35c ea. 6, one kind or assorted. \$1.75. All 9 in one bag for \$2.60.

Giant Double Carnation Flowered. Same as Camellia type except petals are fringed. Nine colors: white, pink, rose, crimson rose, yellow, apricot, salmon, orange, scarlet. 30c ea. 6 of one kind or assorted, \$1.50. All 9 colors in one bag for \$2.25.

Giant Double Picotee. Camellia type fls., with petals edged white. Five colors: pink, rose, apricot, salmon, red. 30c ea. 6 of one kind or assorted, \$1.50. All 5 colors in one bag for \$1.30.

Giant Single Crispa or Frilled. Very large, profusely frilled and ruffled, single flowers. Nine colors: red, rose, scarlet, pink, salmon, apricot, yellow, orange, white. 30c ea., 6 one kind or assorted, \$1.50. All 9 colors in one bag, \$2.25.

Giant Single Marginata. A two-toned Crispa type in 2 colors, white edged pink and salmon, edged scarlet. 30c ea. Six one color or assorted, \$1.50.

Double Hanging Basket, or Lloydii, by Antonelli who is said to have the best. Just right for baskets but look nice in pots or in a rock garden. The long pendant stems are loaded with small Camellia and Rose type flowers. 8 colors: white, pink, rose, scarlet, orange, yellow, salmon, apricot. 35c ea. 6 of one color or assorted, \$1.75. All 8 colors in one bag, \$2.35.

Begonia Evansiana. Hardy Tuberous Begonia. No northern customers have reported its loss by freezing. If mulched, we will guarantee hardy. Large tubers can be planted 4" deep, smaller in proportion. The 2' plants have typical begonia foliage and a multitude of flowers. Recommended for shade garden, but stands quite a bit of sun if watered liberally. Order as early as possible, as often long sprouts have developed by Apr. 1. Sizes as available, 50c ea. 6 for \$2.50.

Begonia Collection # 1. One tuber of each of above 53 var. Price \$13.25.

Creme de la Creme of all Tuberous Begonias. **Named varieties.** These are the finest ever produced.

Autumn Glow. Extremely large cristata. The crests are deep copper contrasting with the apricot of the rest of the flowers. Up to 10" wide.

Fascination. A crispa flower, white with a pink line on the edge, or picotee edge.

Red Triumph. A ruffled camellia type of ruby red with a velvety texture. Very large flowers.

Sunset. Profusely frilled crispa type, light copper with scarlet edge.

These are not graded to size but are usually close to 2" and will make large plants.
Price \$1.00 ea., or the 4 var. for \$3.50.

Begonia Collection # 2. Includes Collection No. 1 and the 4 named var., for \$16.50.

THE ORCHID FAMILY — Orchidaceae

Cymbidiums and Cypripediums are easily grown in living rooms if humidity is increased by a method as we have advised for African Violets.

Cymbidiums are very useful for corsage flowers. We can supply the following:
Butterfly, cream to tan; **Doreen**, greenish bronze; **Giganteum**, red-brown; **Moira**, greenish bronze, barred rose; **Winter Cheer**, bronze and deep rose. Price \$2.50 per front bulb with foliage. **Madeline**, deep pink, \$5.00; **Hookerianum**, olive green, \$7.50. **Assorted varieties**, unlabelled, \$2.00.

How To Grow Cymbidiums is told in our "How To Grow Orchids," a 10 p. pamphlet. Send 25c for it.

We ship Cymbidiums, loose roots and out of pot only. By Express, f.o.b. Potted Cymbidiums do not travel well unless in an expensive crate. If you want them to come by mail, send 75c extra for extra heavy packing material and for postage. We ship by mail at your risk only so be sure to send the insurance fee, which will protect you. By mail you will save at least \$1.00 up to \$2.00 and we advise this if insured.

Cypripedium callosum. In shape, similar to our native Lady Slippers and closely related. Correct botanical name is Paphiopedilum but usually known as above. Flowers are fine for corsages, 3½"-4" wide, white variously marked with green and purple veins and a brown purple lip. Blooms about Jan. to Apr., sometimes later. The best potting mixture is osmundine and sphagnum, equal portions. Require deeper shade than Cattleyas and Cymbidiums. Shipped only in pot, by express, f.o.b. Price reduced to \$5.50.

Cattleyas. We offer fine hybrids and species, (only those species are included that produce fine flowers for cutting) that have been recently repotted in fresh osmundine. They will not need repotting for 2 or 3 years when they should be too large for their pots. **Our selection** of blooming size plants. Tell us what you have and we will not duplicate them. Price \$5.00, express, f.o.b. **C. Enid**, \$7.50, express, f.o.b.

If you are experienced in potting Cattleyas we can send out of pot plants, our selection, 3 or more psuedo bulbs for \$4.00 postpaid.

Bletilla hyacintha. Hardy ground orchid. These can be planted as late as March 1, but not later. **SPECIAL**, 2 bulbs for \$1.00 or 50c ea. with other items.

Culture of Orchids in this catalog is insufficient as several pages would be required. Unless experienced and need no further directions, send us 40c for our two pamphlets, "How To Grow Orchids" and "1949 Orchid Price List." The culture of several not listed here is explained.

Osmundine, best Florida brown grade, \$1.35/lb. postpaid. For scale on orchids, spray with Thrip O cide. See listing under Garden Supplies and for books on orchids see Garden Reference Books.

MISCELLANEOUS

Anemones and **Ranunculus** are nice in pots and are hardy in the deep south. For a better description and good culture send 10c for our 1952 Fall Cat. Do not plant later than Mar. 1. Tecolote Giant Double Ranunculus or Single Anemones. Larger bulbs, 10c ea. 3 for 25c. 60c/doz.

Maranta Kerchoveana. Rabbit Tracks. Nice, easy-to-grow shade plants, for pots. Acid soil. 75c. In paper pot with all soil \$1.35, postpaid.

Ctenanthe oppenheimiana, var. tricolor. (Pronounced tenanthe). This is a very colorful, easy to grow foliage plant. The Marantaceae are tropical, require acid soil (sand and peat) and cool shade, constant moisture. 1 division, out of pot and postpaid,

\$1.00. In paper pot with proper soil \$1.75. A nice clump, in a paper pot, postpaid for \$2.25 or by express, f.o.b. for \$1.25.

Ceropegia. The following are vines having long trailing or twining stems. They may be grown in soil composed of loam, sand and leaf mould or peat, in pots or hanging baskets. Plant at once and keep only slightly moist until started. The flowers are very unusual. Prices are for small tubers or cuttings.

Ceropegia Woodi. Hearts on a String. Sweetheart vine. Rosary vine. Heart shaped leaves. The most desirable species, 50c.

C. debilis. Cylindrical leaves. Rapid grower. 35c.

C. Barklyi (?). The oblong leaves are pointed at the apex. 60c.

THE PINEAPPLE FAMILY — Bromeliaceae

Bromeliads include Billbergia, Aregelia, Aechmea, and many other genera.

Billbergias are most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

How to Grow Billbergias. All are tropical or semitropical epiphytes and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of $\frac{1}{4}$ sand or sandy loam and $\frac{3}{4}$ peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well, water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended. They do well on the trunks of Palms.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do. **Culture** of Aechmea and Aregelia is the same.

Aechmea calyculata. Bright green leaves, yellow fls. \$2.00.

Aregelia spectabilis. Bronze foliage, barred grey green on back. \$3.00.

Billbergia Burkholtsi. Tall, slender, erect green leaves. Rose bracts, lavender fls. \$2.00.

B. distachia. Long, reddish green lvs., spotted cream. Rose bracts, blue and green fls. 75c.

B. nutans. Mid-winter, beautiful inflorescence on small plants. Fine pot plant. 75c.

B. nutans x Cryptanthus acaulis. Highly colored bronze and green leaves. Compact plant. \$1.50.

B. pyramidalis. Wide green lvs. Red fls. tipped violet, red bracts. \$2.00.

B. rubro-cyannea. Most colorful foliage, red and green spotted cream. Green fls. edged blue. Crimson bracts, \$1.00.

B. speciosa. Green lvs., striped on back. Green fls., tipped blue, Rose bracts. \$2.00.

B. Theodore L. Meade. Green lvs. and large, beautiful inflorescence, continuous all year on new ground. \$1.50.

B. thrysiflora, (pyramidalis x amoena). Finest hybrid. Beautiful inflorescence. \$1.50.

B. Zebrina. Lvs., banded white on back. Salmon bracts, green fls. \$1.50.

Collection all 12 varieties. Express, f.o.b., \$16.00. By this method we can send larger plants. By mail, postpaid, \$18.00.

Big 4 Collection. Nutans, Distachia, Rubro-cyannea and Zebrina. Value \$3.50. Price \$3.25. Include Special Handling for these plants by mail.